



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

December 20, 2017

Sent by Email

Mr. Tommy Hodges, P.E.
Energy Manager
Alcoa Inc.
P. O. Box 1491
Rockdale, Texas 76567-1491

RE: Sандow Mine, Permit No. 1G
Revision Application No. 68
Revised Postmine Land-Use Plan
Fish and Wildlife Enhancement Map

Dear Mr. Hodges:

Review of your letter dated December 19, 2017, providing a response to our letter dated December 12, 2017, regarding the conditional approval of Revision No. 68, is complete. Alcoa provided a Fish and Wildlife Enhancement Map depicting fish and wildlife enhancement areas within the approved I/C postmine land use. The map provided satisfies the condition in our December 12, 2017, approval of Revision No. 68.

Should there be any questions, please do not hesitate to call me or Ms. Katherine Upham, technical reviewer for this project.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Denny Kingsley".

J. Denny Kingsley, Director
Surface Mining and Reclamation Division

JDK/KU/tgw
File Reference No. 1719801



Alcoa Primary Metals
Energy Division-Sandow Mine
3990 John D. Harper Road
PO Box 1491
Rockdale, TX 76567-1491 USA

December 19, 2017

Mr. J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division
Railroad Commission of Texas
P.O. Box 12967
Austin, Texas 78701-2967

Railroad Commission
of Texas
RECEIVED

DEC 19 2017

Subject: Alcoa USA Corp.
Sandow Mine, Permit No. 1G
Revision No. 68 – I/C Landuse Revision
Response to December 12, 2017 Approval Letter
File Reference No. 1719801
Alcoa Document Number 2017-67

Surface Mining Division

Dear Mr. Kingsley:

Alcoa received your approval letter of our request for a revision to the approved postmine landuse for Sandow Mine, referred to as Revision 68. In your letter, you requested that Alcoa provide a map depicting fish and wildlife enhancement areas that would remain within the I/C area. Provided with this letter are three copies of the requested map showing areas that will remain as enhancement areas. These areas are denoted by clear boxes on the map and consist of tree areas and ponds. As noted in your letter, these areas will remain unless their use is necessary for Alcoa and/or Luminant Mining should determine that activity is required within these areas. Alcoa further understands that even though these areas are denoted as enhancement areas, the approved landuse will be denoted as industrial/commercial on all postmine landuse maps and future bond release submittals.

Please do not hesitate to call me if you have questions concerning this submittal.

Respectfully,

A handwritten signature in blue ink that reads "Tommy E. Hodges".

Tommy E. Hodges, P.E.
Alcoa USA Corp
Rockdale Operations
Energy Manager
Attachments



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

December 12, 2017

Sent by Email

Mr. Tommy Hodges, P.E.
Energy Manager
Alcoa Inc. (Alcoa)
P. O. Box 1491
Rockdale, Texas 76567-1491

RE: Alcoa Inc. (Alcoa)
Sandow Mine, Permit No. 1G
Revision Application No. 68
Revised Postmine Land-Use Plan

Dear Mr. Hodges:

Review of Revision No. 68 submitted by letter dated July 12, 2017, and supplemented in letter dated November 15, 2017, in response to Staff comments dated August 18, 2017, is complete. A \$500 revision-application filing fee was provided with the initial application. Your application is considered complete and is accepted for filing.

Alcoa proposes to convert 561 acres of pastureland and fish and wildlife land use to industrial/commercial land use. The application was reviewed as a revision to Permit No. 1G, and a copy of Staff's review memorandum is attached.

I find that the application does not constitute a significant departure from the approved reclamation plan in accordance with §12.226. The proposed postmine land-use plan meets the requirements of §12.147 and §12.399. Revision No. 68 is approved and your permit is revised accordingly with the following condition:

- Alcoa must provide a Fish and Wildlife Enhancements map depicting fish and wildlife enhancements that would remain within the I/C area, such as the existing tree motts between the conveyor and haul road, no later than March 31, 2018, but prior to submittal of an application of a Phase I bond release.

Should there be any questions, please do not hesitate to call me or Ms. Katherine Upham, technical reviewer for this project.

Sincerely,

A blue ink signature of J. Denny Kingsley, consisting of a stylized 'J' and 'D' followed by a horizontal line.

J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division

JDK/KU/rv
Attachment
File Reference No. 1719801



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

MEMORANDUM

TO: J. Denny Kingsley, P.E., Director *JK*

THRU: Travis L. Wootton, Assistant Director *Thw*
Timothy G. Walter, P.G., Manager, Applications and Permits *TGW*
Adam Krabbenhoft, Engineering Specialist *ARK*

FROM: Katherine Upham, Natural Resources Specialist

SUBJECT: Alcoa Inc. (Alcoa)
Sandow Mine, Permit No. 1G
Revision No. 68
Revised Postmine Land-Use Plan

DATE: December 12, 2017

INTRODUCTION

Alcoa submitted Revision No. 68 by letter dated July 12, 2017, requesting approval of a revised postmine land-use plan. In response to Staff comment letter dated August 18, 2017, supplemental information was provided by letter dated November 15, 2017. A \$500 revision-application filing fee was included with the initial application. My summary and technical review of the proposal follows:

PROPOSAL SUMMARY

1. Revision No. 68 contains a postmine land-use plan for the permit area in which Alcoa proposes to convert 561 acres of pastureland and fish and wildlife landuse to industrial commercial land use in support of Alcoa's industrial activities at the Rockdale facilities. The plan is comprised of pages 147-1 through 147-4, Plates 147-1 and 147-2, *Postmine Land Use*, and Plate 147-2, *Postmine Land Use Changes*, which contain depictions of submittal of the following proposed postmine land uses as listed in revised Table 147-1, *Premine-Postmine Comparison*:

Land-Use Category	Premine (Acres)	Areal %	Postmine (Acres)	Areal %
Pastureland	3,314	33.4	6,050	66.3
Fish and Wildlife Habitat	0	0	383	3.9
Industrial/Commercial	1,142	11.5	2,948	24.2
Developed Water Resources	92	0.9	558	5.6
Cropland	12	0.1	0	0.0
Grazingland	4,529	45.5	0	0.0
Undeveloped	850	8.6	0	0.0
Totals	9,939	100.0	9,939	100.0

2. Supplemental information included the Revision No. 69 approval letter and review memo, random excerpts from a lease between Alcoa and Luminant, the Revision No. 70 approval letter and review memo, and approved Plate 150-4-6, *Area H Cottonwood Channel Plan and Profile STA. 0+00 To 31+00*.

PROPOSAL EVALUATION

Alcoa's proposed plan in Table 147-1, compared to the June 16, 2016, approved Table 147-1 in Revision No. 59, contains the following changes:

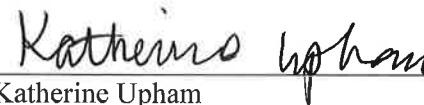
Land-Use Category	Approved Revision No. 59 Postmine Area (Acres)	Proposed Revision No. 68 Postmine Area (Acres)	Difference (Acres)
Pastureland	6,585	6,050	-535
Fish and Wildlife Habitat	386	383	-3
Industrial/Commercial	2,410	2,948	538
Developed Water Resources	558	558	0
Residential	0	0	0
Grazingland	0	0	0
Undeveloped	0	0	0
Totals	9,939	9,939	0

This submittal is a revision to the permit because the revised postmine land-use plan was not contemplated in the approved permit. The proposed revision does not constitute a significant departure from the approved reclamation plan as described at §12.226, and Alcoa has provided the information necessary to demonstrate compliance with §12.147 and §12.399. The information evaluated during my review of the proposed postmine land-use plan is described on the attached review summary sheet.

I recommend approval of Revision No. 68 with the following condition:

- Alcoa must provide a Fish and Wildlife Enhancements map depicting fish and wildlife enhancements that would remain within the I/C area, such as the existing tree motts between the conveyor and haul road, no later than March 31, 2018, but prior to submittal of an application for Phase I bond release.

The Regulations at §12.380(e)(11) state that, "where the primary land use is to be residential, public service, or industrial land use, intersperse reclaimed lands with greenbelts utilizing species of grass, shrubs and trees useful as food and cover for birds and small animals, unless such green belts are inconsistent with the approved postmining land use." As discussed in our August 17, 2017, meeting, the existing tree motts are unlikely to hinder access to the conveyor as machinery is not likely to maneuver through existing trees. Additionally, there is no regulation that requires that fish and wildlife enhancement areas within an I/C land use remain undisturbed. Therefore, there would be no regulatory obstacle if Alcoa or Luminant Mining needed to access and/or disturb the fish and wildlife enhancement area. Designating the existing tree motts as fish and wildlife enhancement features is more consistent with the existing land use. Fish and wildlife enhancement areas provide crucial habitat to wildlife and help to stabilize soil and prevent erosion. Feel free to contact me if you have any questions.



Katherine Upham

Review Summary

Reviewer name: Katherine Upham		
Mine name: Sandow		
Permit No. 1G	Revision No. 68	File Reference No. 1719801
Regarding: Postmine land use revision		

Regulation	Meets?	Information Reviewed and/or Notes
§12.71	Yes (Y)	Permit No. 1G, Section .118
§12.108	Y	Revision No. 68
§12.117	Y	Permit No. 1G, Exhibit 136-A1 and 136-A2, Tract Nos. 136, 137, 162, 163, 164, 173, 174, 201, 216, 219, 228, 237, 238, 239, 246, 248, 250, 251, 260, 261, 270, 271, 272, 273, 292, 294, 345, 346, 354, 391
§12.144 and §12.380	Y	USACE Nationwide Permits SWF-1999-00455
§12.142(2)(C)	Y	Revision No. 60, Plate 145-B2 (June 3, 2016), Mined and Disturbed
§12.145(b)(3)	Y	Revision No. 23, Plate 137-K3, K2; Revision No. 68, Plate 147-1, 2, 2
§12.146(d)	Y	Permit No. 1G, Section .146 (Less than 2,170 PHC Acres)
§12.147	Y	Revision No. 68, Plate 147-1, 2, 2
§12.148	Y	Revision No. 68, Plate 147-1, 2, 2
§12.313(a)(2) and (3)	Y	Proposed 177.2 Acre Release Area Map 1 (Project ID: 201625902)
§12.355	Y	Permit No. 1G, Section .132, Plate 132-1
§12.360	N/A	
§12.382	N/A	
§12.384	N/A	
§12.390	Y	Permit No. 1G, Section .145
§12.395	Y	Revision to ERA letter dated August 2, 2016, 01/10/2013 ERP Location Map (Project ID: 1621601)
§12.399(a)	Y	Permit No. 1G, Section .147, Revision No. 68
§12.399(b)	Y	Permit No. 1G, Section .135, Plate 135-1
§12.399(c)	Y	Permit No. 1G, Section .136, No leased tracts; Revision No. 68, Dennis Wade Hill, a licensed professional engineer in the State of Texas, certified revised Table 147-1 and Plate 147-1, 2, 2 on June 1, 2017
Notes:		



Alcoa Primary Metals
Energy Division-Sandow Mine
3990 John D. Harper Road
PO Box 1491
Rockdale, TX 76567-1491 USA

November 15, 2017

Mr. J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division
Railroad Commission of Texas
P.O. Box 12967
Austin, Texas 78701-2967

Railroad Commission
of Texas
RECEIVED

NOV 16 2017

Re: Alcoa USA Corp.
Sandow Mine, Permit No. 1G
Revision No. 68
Proposed Postmine Landuse Revision
Response to RCT Comments
File Reference No. 1719801
Alcoa Submittal 2017-61

Surface Mining Division

Dear Mr. Kingsley:

Alcoa received your letter dated August 18, 2017 regarding the proposed postmine landuse revision submitted by Alcoa by letter dated July 12, 2017. Following are our responses to your comments regarding that submittal:

1. Further justification needs to be provided for the proposed I/C area to show that it meets the requirements of § 12.399(a). This justification needs to be provided for the full width of the corridor. In particular, information on the I/C activities proposed within the existing fish and wildlife habitat and pastureland land-use areas needs to be provided.

Response:

Pursuant to one or more agreements, Luminant leases or otherwise has the right to access and use virtually the entire proposed industrial/commercial landuse area for various industrial activities. For so long as the agreement(s) remain in effect, industrial activities in the proposed area may include: use, operation and maintenance of the haul road, conveyor, south crusher, south lignite stockpile, and all appurtenances thereto; assembly or disassembly and removal of equipment associated with the conveying system; assembly or disassembly and removal of haulage equipment owned and operated by the power plant facility; staging of repair parts associated with the conveyor, hauling equipment or electrical equipment necessary for powering of the conveyor; staging of base materials for repairs to inspection roads or transportation roads; or any other activities necessary for the operation and maintenance of these

Mr. J. Denny Kingsley, P.E.

November 15, 2017

Page 2 of 3

facilities. Any or all of these activities may occur within the proposed industrial use area for so long as the agreement(s) remain in effect.

Alcoa desires and intends that the entire proposed industrial use area continue to be used for industrial/commercial uses after termination of the agreement(s) referred to above.

2. Copies of applicable portions from Luminant and Alcoa's lease regarding the I/C area needs to be provided.

Documentation that the haul road has been permanent should also be provided.

Response:

A copy of a memorandum of a lease held by Luminant, entitled "*Memorandum Of Restated And Amended Ground Lease (Mine Conveyor, South Crusher and South Stockpile)*," is provided with this letter. Because of confidentiality requirements, Alcoa is unable to provide other documentation regarding the agreement(s) referred to above.

The requested documentation regarding the haul road is provided with this letter. Also provided is the approval letter for Pond 061 and the diversion associated with the structure.

3. Justification for the pastureland land use for the area south of Pond RH 1-B 1, which was approved in Revision No. 36, needs to be provided. The area appears to be a developed water resource and should be depicted on the postmine land-use map as such unless there is justification for it being pastureland land use (e.g., if it is an approved small depression).

Response:

The area in question is a wetland feature associated with the construction of the Cottonwood Creek Restoration project approved as part of the Permit 1E Renewal/Revision application. This area does not meet the definition of a small area depression as it has a defined outlet (Cottonwood Creek). The area is shown on Drawing 150-4-6 provided with this letter. This wetland feature holds water during wet periods and is dry the remainder of the time. Alcoa believes pastureland land use is appropriate for this wetland area.

Mr. J. Denny Kingsley, P.E.

November 15, 2017

Page 3 of 3

4. Alcoa should identify any fish and wildlife enhancements that would remain within the I/C area, such as the existing tree motts, until such areas would be affected by I/C activities.

Response:

Alcoa is requesting that the entire area proposed as industrial/commercial landuse be designated as such, without qualification. Designation of existing motts of trees to remain within the I/C landuse area "until such areas would be affected by I/C activities" could be viewed as contradicting the intended uses of the proposed industrial/commercial use area; such a designation could limit Luminant's or Alcoa's right to fully access the entire area and, for example, determine whether and how it wishes to utilize the area for industrial purposes. Depending upon how the words "affected by I/C activities" are construed, and depending upon Luminant's needs for so long as the agreement(s) remain in effect and Alcoa's needs thereafter, all areas within the proposed industrial/commercial use area may be cleared and leveled before the areas are actually "affected by I/C activities." Therefore, Alcoa believes it is inappropriate to require it to "identify any fish and wildlife enhancements that would remain within the I/C area, such as the existing tree motts, until such areas would be affected by I/C activities."

Please do not hesitate to call me if you have questions concerning this submittal.

Respectfully,



Tommy E. Hodges, P.E.

Alcoa USA Corp.

Rockdale Operations

Energy Manager

Enclosures

Puccio, Karolyn K.

From: Renee Vick <Renee.Vick@rrc.texas.gov>
Sent: Friday, July 14, 2017 3:42 PM
To: Hodges, Tommy; Tomecek, Terrill; Puccio, Karolyn K.; Hill, Dennis W. (Hill Engineering)
Cc: Scott Engelmann
Subject: EXT: SA1F Rev 69 letter from Kingsley
Attachments: SA1F Rev 69 DDI 02 and DDI 03 Permanent Diversions.pdf

Thanks.

Renee Vick
Administrative Assistant III
Surface Mining and Reclamation Division
Railroad Commission of Texas
512-463-6900





RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

July 14, 2017

Sent by Email

Mr. Tommy Hodges
Energy Manager
Alcoa Inc.
P. O. Box 1491
Rockdale, Texas 76567-1491

RE: Sandow Mine, Permit No. 1F
Revision No. 69
Pond 061 Permanent Impoundment
DDI-02 and DDI-03 Permanent Diversions

Dear Mr. Hodges:

Review of Revision No. 69, submitted by letter dated June 13, 2017, is complete. Alcoa requests approval of detailed design plans for Pond 061 Permanent Impoundment, DDI-02 and DDI-03 Permanent Diversions. Alcoa provided a \$500 revision-application filing fee with the application. A copy of Staff's technical review memorandum is enclosed. The revision application is considered complete and is accepted for filing.

This application is considered a revision to Permit No. 1F because detailed design plans for Pond 061 Permanent Impoundment differ from the approved general design plans. I find that the application does not constitute a significant departure from the approved reclamation plan in accordance with §12.226. Pond 061 Permanent Impoundment, DDI-02 and DDI-03 Permanent Diversions meets the specifications detailed in 16 TEXAS ADMIN. CODE §§12.341 and 12.347. Revision No. 69 is approved and your permit is revised accordingly.

Alcoa should update the postmine topography and postmine landuse maps to reflect the footprint of the Pond 004 Permanent Impoundment, in the next appropriate revision. Should there be any questions, please do not hesitate to call me or Joseph Parks, Technical Coordinator for review of this application.

Sincerely,


J. Denny Kingsley
J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division

JDK/JWP/rv
Enclosure
File Reference No. 1716401



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

MEMORANDUM

TO: J. Denny Kingsley, P.E. Director

THRU: Travis L. Wootton, Assistant Director *AK*
Timothy G. Walter, P.G., Manager, Applications and Permits
Adam Krabbenhoft, Engineering Specialist *APK*.

FROM: Joseph Parks, Engineering Specialist *JP*

SUBJECT: Alcoa Inc.
Sandow Mine, Permit No. 1F
Revision No. 69
Pond 061 Permanent Impoundment
DDI-02 and DDI-03 Permanent Diversions

DATE: July 14, 2017

Alcoa submitted Revision No. 69 by letter dated June 13, 2017. Alcoa requests approval of detailed design plans for Pond 061 Permanent Impoundment, DDI-02 and DDI-03 Permanent Diversions. A \$500 revision-application filing fee was included with the application. My technical review and a summary of the proposal follow:

PROPOSAL SUMMARY

Alcoa's design proposal includes a design certification letter, introduction, description, pond hydrologic and hydraulic analyses, water quality, watershed map, plan and profiles and typical cross-section drawings, water mass-balances, and lab results from water-grab samples. The details of the proposed structure are depicted on *Pond 061 Plan, Section and Watershed Map*. Specific design details for the proposed structures are provided on the attached structure summary sheets.

Pond 061 Permanent Impoundment, DDI-02 and DDI-03 Permanent Diversions were approved as temporary structures by letter dated July 17, 2001. As-built configuration of the pond and diversions was approved September 29, 2003. Pond 061 Permanent Impoundment is totally incised structure and has a combination principle/emergency concrete-lined spillway. DDI-02 and DDI-03 diversions are grass-lined channels with a bottom width of 12 feet and side slopes of 4:1 (h:v). DDI-02 Diversion has a single grouted rock drop structure at the inlet to Pond 061. DDI-03 Diversion contains four grouted rock drop structures of which one is at the inlet to Pond 061 and one set of concrete box culverts consisting of two 3' x 2' boxes. SEDCAD4 was used to calculate the peak runoff produced by a 25-year/6-hour and 10-year/24-hour storm events. Results from a grab sample taken at the pond were provided in the application.

PROPOSAL EVALUATION

This submittal is considered a revision to Permit No. 1F because detailed design plans for the Pond 061 Permanent Impoundment differ from the approved detailed design plans as a Temporary structure.

Staff's review of the application and SMRD files indicates the following:

- a. Alcoa owns all of the property affected by the proposed activities; therefore, no adverse impacts to private landowners are anticipated;
- b. There are no protected cultural resource sites that will be affected;
- c. The approved probable hydrologic consequences (PHC) determination will not be affected;
- d. No operations are proposed within 300 feet of a public building, school, church, occupied dwelling, community or institutional building;
- e. No operations are proposed within 100 feet of a cemetery;
- f. No operations are proposed within 100 feet of a public road (as measured from the outside right-of-way), except as allowed in §12.71(a)(4); and
- g. No operations are proposed within or adjacent to lands within the boundaries of the National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, or the Wild and Scenic Rivers System.

The requirements of §§12.341 and 12.347 have been met for Pond 061 Permanent Impoundment, DDI-02 and DDI- 03 Permanent Diversions. The information evaluated during my review of Revision No. 69 is described on the attached review summary sheets.

The footprint and location of the Pond 061 Permanent Impoundment are slightly different than the footprint and location depicted on Plate 147-1 and should be updated in the next appropriate revision to reflect the footprint and location of the impoundments.

I recommend approval of Revision No. 69. Feel free to contact me if you have questions.



Joseph Parks

JWP/rv
Attachment
File Reference No. 1716401

Pond 061 Permanent Impoundment Summary

Reviewer name: Joseph Parks	
Mine name: Sandow Mine	
Permit No.: 1F	Revision No.: 69
File Reference No.: 1716401	
Structure name: Pond 061 Permanent Impoundment	
Embankment? No	If not incised, impounded depth: Incised
Regulated by MSHA? No	Embankment safety factor: N/A
Surface area: 2.7 acres	
Impounded capacity: 20.8 acre-feet	
Total capacity: 21 acre-feet	
Watershed area: 82.7 acres	
Design rainfall event: 25-year/6-hour (6.0 inches of precipitation)	
Peak inflow: 154.3 cfs	
Peak outflow: 146.67 cfs	
Normal pool elevation: 419.0 feet-amsl	
Pond bottom elevation: 405.0 feet-amsl (lowest)	
Peak water surface elevation: 421.87 feet-amsl	
Primary spillway type: Square-notch weir; trapezoidal Lining material: Concrete-lined; grass-lined Side slopes: 2(h):1(v); 4(h):1(v) Bottom width: 2.0 feet; 12 feet Peak discharge: 146.7 cfs (25-year/6-hour) Maximum velocity: 5.1 fps Maximum flow depth: 1.58 feet Spillway elevation: feet-amsl 419.0	Emergency spillway type: combination w/primary Lining material: Side slopes: Bottom width: Peak discharge: Maximum velocity: Spillway elevation:
Inlets or drop structures? No How many? 0 Lining Material: Side slopes: Bottom width: Peak discharge: Maximum velocity: Flow depth:	
Receiving Stream Segment:	Water sample provided? Yes Sample location: Pond 061 pH (s.u.): 8.35 TDS (ml/l): 144 TSS (ml/l): ND
Notes:	

Reviewer name: Joseph Parks
Mine name: Sandow
Permit No. 1F Revision No. 69 File Reference No. 1716401
Structure name: DDI-02 Permanent Diversion

Diversion Type: Permanent, Miscellaneous
Reclamation date: None
Does the diversion form a portion of a surface-water control boundary? No
Length (ft): 1,575
Watershed area (acre) Total: 64.1
Design rainfall event: 25-yr/6-hr

Channel type: Trapezoidal
Lining material: Vegetation/Grouted Riprap
Side slopes (h:v): 4:1 or less
Bottom width (ft): 12.0
Peak flow (cfs): 183.07
Maximum velocity (fps): 23.99 (erosion controls)
Flow depth (ft): .54
Maximum slope of channel (%): 16.34

Drop structures or low-water crossings	Cross drainage structure
How many? 1 Drop structures	How many? None
Material: Grouted Riprap	Culvert Material:
Side Slopes: 4h:1v	Culvert Length:
Bottom Width: 12 ft	Culvert Diameter:
Vertical Drop Height: 22.1 ft,	Culvert Slope:
Peak Flow: 183.07 cfs	Watershed Area:
Maximum Grade: 16.34%	Peak Discharge:
Maximum Velocity: 23.99 fps	Maximum Tailwater Velocity:
Maximum Depth: .54 ft,	

Notes:

Reviewer name: Joseph Parks		
Mine name: Sandow		
Permit No. 1F	Revision No. 69	File Reference No. 1716401
Structure name: DDI-03 Permanent Diversion		

Diversion Type: Permanent, Miscellaneous
Reclamation date: None
Does the diversion form a portion of a surface-water control boundary? No
Length (ft): 2,100
Watershed area (acre) Total: 18.6
Design rainfall event: 25-yr/6-hr

Channel type: Trapezoidal
Lining material: Vegetation/Grouted Riprap
Side slopes (h:v): 4:1 or less
Bottom width (ft): 12.0
Peak flow (cfs): 53.66
Maximum velocity (fps): 13.38 (erosion controls)
Flow depth (ft): .30
Maximum slope of channel (%): 10.11

Drop structures or low-water crossings How many? 4 Drop structures Material: Grouted Riprap Side Slopes: 4h:1v Bottom Width: 12 ft Vertical Drop Height: 11.8 ft, 6.0 ft, 7.9 ft, 12.3 ft Peak Flow: 53.66 cfs Maximum Grade: 10.11% Maximum Velocity: 11.4 fps, 12.0 fps, 13.0 fps, 13.4 fps Maximum Depth: .35 ft, .33 ft, .31 ft, .3 ft.	Cross drainage structure How many? One Culvert Material: Concrete Box Culvert Length: Culvert Size: 2 - 3' x 2' Culvert Slope: 1.26 Watershed Area: 208.02 Peak Discharge: 53.66 Maximum Tailwater Velocity: 3.833 fps
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Notes:

Review Summary

Pond 061 Permanent Impoundment Review Summary

Reviewer name: Joseph Parks

Mine name: Sandow Mine

Permit No.: 1F	Revision No. 69	File Reference No. 1716401
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Structure name: POND 004 Permanent Impoundment

Regulation	Meets?	Information Reviewed and/or Notes
§12.71	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, section .118.
§12.108	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, Payment made 3138884.
§12.117	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, Plate 136-A2, Pond 061 Tracks No. 272 and 273; DDI- 02 and 03 Tracts No.272, 273, and 260.
§12.125(2)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, section .125
§12.142(2)(C) and 12.145(b)(2)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 60, Plate 145-B2, Pond 061 and DDI-02 disturbed rate, \$3,832 per acre; DDI-03 mined rate \$5,154.
§12.144	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, section .121, USACE Nationwide Permit 21 No. 1999-00455.
§12.145(b)(3)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, Plate 145-B6 (<i>Postmining Contours</i>), generally supports.
§12.146(a)(5)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.146(d)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, section .146 (Less than 2,170 PHC Acres).
§12.147	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 59, Plate 147-1, sheet 1 of 2, Pond 061 Permanent Impoundment - Fish and Wildlife habitat.
§12.148	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, Pond 061 Permanent Impoundment, 25-year/6-hour storm, signed and sealed by Dennis Wade Hill, P.E., a professional engineer licensed in the State of Texas.
§12.341(a)(1)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69 Drawing No. 061, not a surface-water control boundary.
§12.341(a)(2)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, SED-CAD modeling
§12.341(a)(3)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.341(a)(4)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, Drawing No. 061, 4h:1v or less, vegetation with erosion controls.
§12.341(b)(1)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.341(b)(2)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.341(b)(3)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.341(b)(4)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.341(c)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, Drawing No. 061
§12.344	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Permit No. 1F, section .148, Drawing No. 148-3.
§12.347(a)(1)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, Pond 061 Permanent Impoundment- totally incised.
§12.347(a)(2)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	N/A
§12.347(a)(3)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, certified by Dennis Wade Hill, P.E.
§12.355	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, no streams in the area.
§12.382	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 69, no pipelines in the area.
§12.399	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Revision No. 59, Plate 147-1 (<i>Postmine Landuse</i>), generally supports Developed Water Resource.

Note: The footprint and location of the Impoundment should be updated in next appropriate revision application.

STATE OF TEXAS
COUNTIES OF MILAM
AND LEE

**MEMORANDUM OF
RESTATED AND AMENDED
GROUND LEASE**
(MINE CONVEYOR, SOUTH CRUSHER AND SOUTH STOCKPILE)

THIS MEMORANDUM OF RESTATED AND AMENDED GROUND LEASE
("Memorandum") is executed as of October 10, 2017 to be effective as of the Effective Date set forth
below by and between Alcoa USA Corp., 201 Isabella Street, Pittsburgh, Pennsylvania 15212 ("Alcoa
USA"), a Delaware corporation, and Luminant Mining Company LLC, 6555 Sierra Drive, Irving, Texas
75039 ("Luminant Mining"), a Texas limited liability company.

Reference is made to that certain Ground Lease dated effective September 1, 2007, by and between Alcoa USA (as successor to Alcoa Inc.) and Luminant Mining (as successor to TXU Mining Company LP), a memorandum of which is recorded in Volume 1013, Page 002, Real Property Records, Lee County, Texas, and Volume 1063, Page 542, Official Records, Milam County, Texas (the "2007 Lease").

Notice is hereby given that dated as of October 10, 2017 and effective as of October 1, 2017 ("Effective Date"), Alcoa USA and Luminant Mining entered into an Amended and Restated Ground Lease ("Amended Lease") by which Alcoa USA leased to Luminant Mining certain real property ("Leased Premises") owned by Alcoa USA and located within the boundaries of Alcoa USA's property in Lee and Milam Counties, Texas. The Leased Premises are more particularly described in Exhibit A attached hereto, and are to be utilized by Luminant Mining in order to operate, maintain and reclaim certain coal facilities owned by Luminant Mining located in Lee and Milam Counties, Texas. True and complete copies of the Amended Lease are in the possession of both Alcoa USA and Luminant Mining, and the specific terms and provisions of the Amended Lease are contained therein. This Memorandum is executed for the sole purpose of giving record notice of the Amended Lease in lieu of recording the same in its entirety.

Any sale of the Leased Premises, or any portion thereof, shall be made subject to the terms and provisions of the Amended Lease, and shall require the assumption by the purchaser of all of Alcoa USA's rights and obligations under the Amended Lease.

[Signatures on following pages]

IN WITNESS WHEREOF, Alcoa USA and Luminant Mining have executed this Memorandum to be effective as of the Effective Date.

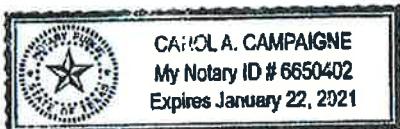
ALCOA USA CORP.

By: Tommy E. Hodges
Name: Tommy E. Hodges
Title: ATTORNEY-IN-FACT

STATE OF TEXAS §
COUNTY OF TRAVIS §

This instrument was acknowledged before me on the 10 day of October, by Tommy E. Hodges, Attorney-In-Fact of Alcoa USA Corp. on behalf of the same.

Carola Campaigne
NOTARY PUBLIC FOR THE STATE OF TEXAS



Signature Page

VUL 12172021 11

LUMINANT MINING COMPANY LLC

By:

By: Matt Goering
Name: Matt Goering
Title: VP

STATE OF TEXAS §
 §
COUNTY OF DALLAS §

This instrument was acknowledged before me on the 10th day of October, by October,
Matt Goering of Luminant Mining Company LLC on behalf of the same.

L. Juskiewicz
NOTARY PUBLIC FOR THE STATE OF TEXAS



Signature Page

Exhibit A

Leased Premises

Totaling 61.57 acres in Two Parts

Part 1
CONVEYOR CORRIDOR AREA 2 - 29.984 ACRES

BEGINNING at a point whose Northing is 289688.367 and whose Easting is 2991829.895; THENCE bearing S 37-43-42.900 W a distance of 4900.58 feet; THENCE bearing N 21-17-54.052 W a distance of 14.00 feet; THENCE bearing N 37-43-42.900 E a distance of 4893.38 feet; THENCE along a curve to the LEFT, having a radius of 11994.00 feet a delta angle of 05° 21' 38", and whose long chord bears N 35-2-51.086 E a distance of 1121.77 feet; THENCE bearing N 32-22-1.877 E a distance of 1999.36 feet; THENCE along a curve to the RIGHT, having a radius of 12006.00 feet a delta angle of 07° 31' 02", and whose long chord bears N 36-7-32.827 E a distance of 1574.06 feet; THENCE bearing N 39-53-3.778 E a distance of 7413.18 feet; THENCE along a curve to the RIGHT, having a radius of 9756.00 feet a delta angle of 22° 55' 10", and whose long chord bears N 51-20-38.814 E a distance of 3876.63 feet; THENCE bearing N 62-48-13.851 E a distance of 410.90 feet; THENCE bearing N 48-14-23.755 E a distance of 196.78 feet; THENCE bearing N 51-34-14.394 E a distance of 86.57 feet; THENCE bearing N 66-22-1.369 E a distance of 127.00 feet; THENCE bearing S 85-10-5.674 E a distance of 52.89 feet; THENCE bearing S 24-0-48.302 E a distance of 30.45 feet; THENCE bearing N 62-48-13.851 E a distance of 22.32 feet; THENCE along a curve to the LEFT, having a radius of 6894.00 feet a delta angle of 31° 18' 14", and whose long chord bears N 47-9-6.907 E a distance of 3719.90 feet; THENCE along a curve to the RIGHT, having a radius of 8506.00 feet a delta angle of 31° 13' 53", and whose long chord bears N 47-6-56.239 E a distance of 4579.33 feet; THENCE along a curve to the LEFT, having a radius of 7994.00 feet a delta angle of 32° 44' 56", and whose long chord bears N 46-21-24.638 E a distance of 4507.22 feet;

11121705313

THENCE bearing N 29-58-56.761 E a distance of 3324.56 feet;

THENCE along a curve to the LEFT, having a radius of 9994.00 feet a delta angle of 05° 49' 11", and whose long chord bears N 27-4-21.428 E a distance of 1014.67 feet;

THENCE bearing N 24-9-46.094 E a distance of 2072.74 feet;

THENCE along a curve to the LEFT, having a radius of 9994.00 feet a delta angle of 04° 50' 42", and whose long chord bears N 21-44-24.990 E a distance of 844.86 feet;

THENCE bearing N 19-19-3.886 E a distance of 1288.22 feet;

THENCE along a curve to the LEFT, having a radius of 9993.97 feet a delta angle of 10° 03' 00", and whose long chord bears N 14-17-33.906 E a distance of 1750.76 feet;

THENCE bearing N 9-13-8.680 E a distance of 4725.03 feet;

THENCE bearing N 8-26-7.994 W a distance of 304.56 feet;

THENCE bearing N 19-58-3.386 E a distance of 417.17 feet;

THENCE bearing N 62-32-44.851 W a distance of 30.17 feet;

THENCE bearing N 34-24-14.686 E a distance of 49.27 feet;

THENCE bearing S 52-20-3.250 E a distance of 29.76 feet;

THENCE bearing N 44-39-53.915 E a distance of 143.44 feet;

THENCE bearing N 27-5-29.419 E a distance of 108.15 feet;

THENCE bearing S 57-17-16.094 E a distance of 14.31 feet;

THENCE bearing N 29-30-26.795 E a distance of 2064.40 feet;

THENCE bearing N 54-6-32.983 W a distance of 63.00 feet;

THENCE bearing N 31-41-35.971 E a distance of 113.23 feet;

THENCE bearing N 89-38-52.162 E a distance of 68.09 feet;

THENCE bearing N 30-23-6.994 E a distance of 2400.62 feet;

THENCE bearing N 5-57-14.333 E a distance of 63.05 feet;

THENCE bearing N 18-27-0.236 W a distance of 53.34 feet;

THENCE bearing N 47-2-46.206 W a distance of 46.13 feet;

THENCE bearing N 20-4-21.187 E a distance of 51.42 feet;

THENCE bearing S 75-22-49.752 E a distance of 107.34 feet;

THENCE bearing N 14-37-10.248 E a distance of 2340.45 feet;

THENCE bearing N 75-0-24.024 W a distance of 70.08 feet;
THENCE bearing N 14-24-42.429 E a distance of 60.97 feet;
THENCE bearing S 71-25-47.870 E a distance of 70.46 feet;
THENCE bearing N 14-37-10.248 E a distance of 498.62 feet;
THENCE bearing N 73-45-53.766 W a distance of 75.72 feet;
THENCE bearing N 10-18-48.582 E a distance of 53.53 feet;
THENCE bearing S 80-22-14.267 E a distance of 42.94 feet,
THENCE bearing N 1-42-40.200 E a distance of 53.49 feet;
THENCE bearing N 43-5-39.781 W a distance of 50.27 feet;
THENCE bearing N 66-49-9.109 W a distance of 36.49 feet;
THENCE bearing N 26-9-55.770 E a distance of 63.43 feet;
THENCE bearing S 66-7-55.086 E a distance of 61.14 feet;
THENCE bearing N 65-17-45.578 E a distance of 122.20 feet;
THENCE bearing N 19-55-12.040 W a distance of 49.23 feet;
THENCE bearing N 70-31-45.883 E a distance of 55.06 feet;
THENCE bearing S 26-5-17.199 E a distance of 82.56 feet;
THENCE bearing N 63-54-42.801 E a distance of 1797.68 feet;
THENCE bearing N 24-45-51.814 W a distance of 124.89 feet;
THENCE bearing N 59-42-37.368 E a distance of 60.12 feet;
THENCE bearing S 36-26-0.262 E a distance of 122.98 feet;
THENCE bearing N 48-16-29.182 E a distance of 1991.82 feet;
THENCE bearing N 44-54-1.299 W a distance of 74.22 feet;
THENCE bearing N 46-39-41.856 E a distance of 60.50 feet;
THENCE bearing S 41-43-30.818 E a distance of 75.81 feet;
THENCE bearing N 48-16-29.182 E a distance of 252.92 feet.
THENCE bearing N 41-42-30.537 W a distance of 41.72 feet.
THENCE bearing N 42-47-36.762 E a distance of 27.97 feet;
THENCE bearing N 44-44-42.965 W a distance of 69.87 feet.

THENCE bearing N 47-43-35.563 E a distance of 58.94 feet;
THENCE bearing S 48-42-57.946 E a distance of 61.41 feet;
THENCE bearing S 41-44-2.714 E a distance of 53.77 feet;
THENCE bearing N 48-15-57.286 E a distance of 671.14 feet;
THENCE bearing N 41-44-2.714 W a distance of 78.02 feet;
THENCE bearing N 51-27-56.969 E a distance of 45.85 feet;
THENCE bearing S 41-44-2.714 E a distance of 75.46 feet;
THENCE bearing N 48-15-57.286 E a distance of 1174.23 feet;
THENCE bearing N 41-13-10.457 W a distance of 11.26 feet;
THENCE bearing N 47-59-8.289 E a distance of 85.70 feet;
THENCE bearing S 41-44-51.852 E a distance of 11.67 feet;
THENCE bearing N 48-15-8.148 E a distance of 2287.68 feet;
THENCE bearing N 38-46-35.977 E a distance of 112.69 feet;
THENCE bearing S 69-24-21.701 E a distance of 14.76 feet;
THENCE bearing N 20-35-38.299 E a distance of 1630.48 feet;
THENCE bearing N 9-44-41.810 W a distance of 91.02 feet;
THENCE bearing N 50-44-4.308 W a distance of 23.25 feet;
THENCE bearing N 26-35-4.397 E a distance of 36.57 feet;
THENCE bearing S 59-3-28.554 E a distance of 22.26 feet;
THENCE bearing S 64-30-33.337 E a distance of 46.40 feet;
THENCE bearing N 39-11-46.892 E a distance of 2033.08 feet;
THENCE bearing N 35-6-54.885 E a distance of 114.18 feet;
THENCE bearing N 20-6-15.829 W a distance of 95.90 feet;
THENCE bearing N 34-2-53.439 E a distance of 13.83 feet;
THENCE bearing S 79-25-2.031 E a distance of 9.83 feet;
THENCE bearing N 64-47-54.872 E a distance of 8.36 feet;
THENCE bearing S 25-12-5.128 E a distance of 65.14 feet;
THENCE bearing S 22-30-25.971 E a distance of 155.00 feet;

THENCE bearing S 62-53-16.141 W a distance of 39.83 feet;
THENCE bearing N 43-31-45.146 W a distance of 88.34 feet;
THENCE bearing S 39-11-46.892 W a distance of 2105.44 feet;
THENCE bearing S 20-35-38.299 W a distance of 1745.95 feet;
THENCE bearing S 48-15-8.148 W a distance of 172.69 feet;
THENCE bearing S 41-44-51.852 E a distance of 63.07 feet;
THENCE bearing S 51-21-53.101 W a distance of 50.72 feet;
THENCE bearing N 41-44-51.852 W a distance of 60.31 feet;
THENCE bearing S 48-15-8.148 W a distance of 2189.38 feet;
THENCE bearing S 41-44-51.852 E a distance of 32.74 feet;
THENCE bearing S 50-29-14.412 W a distance of 26.97 feet;
THENCE bearing N 41-44-2.714 W a distance of 31.70 feet;
THENCE bearing S 48-15-57.286 W a distance of 1967.60 feet;
THENCE bearing S 48-16-29.182 W a distance of 1.27 feet;
THENCE bearing S 41-43-30.818 E a distance of 68.11 feet;
THENCE bearing S 48-16-29.182 W a distance of 57.22 feet;
THENCE bearing N 41-43-30.819 W a distance of 2.21 feet;
THENCE bearing N 41-43-30.818 W a distance of 65.91 feet;
THENCE bearing S 48-16-29.182 W a distance of 76.44 feet;
THENCE bearing S 41-43-30.818 E a distance of 46.35 feet;
THENCE bearing S 50-47-12.738 W a distance of 63.10 feet;
THENCE bearing N 41-43-30.818 W a distance of 43.58 feet;
THENCE bearing S 48-16-29.182 W a distance of 2081.21 feet;
THENCE bearing S 41-43-30.818 E a distance of 59.18 feet;
THENCE bearing S 48-50-19.425 W a distance of 64.97 feet;
THENCE bearing N 48-32-44.984 W a distance of 58.95 feet;
THENCE bearing S 48-16-29.182 W a distance of 40.79 feet;
THENCE bearing S 63-54-42.801 W a distance of 1996.46 feet;

THENCE bearing S 14-37-10.248 W a distance of 2817.18 feet;

THENCE bearing S 75-22-49.752 E a distance of 64.37 feet;

THENCE bearing S 12-24-20.440 W a distance of 72.59 feet;

THENCE bearing N 76-35-33.755 W a distance of 67.19 feet;

THENCE bearing S 14-37-10.248 W a distance of 250.02 feet;

THENCE bearing S 30-23-6.994 W a distance of 2506.14 feet;

THENCE bearing S 37-27-26.533 E a distance of 89.49 feet;

THENCE bearing S 41-42-5.090 W a distance of 87.64 feet;

THENCE bearing N 73-22-3.786 W a distance of 66.54 feet;

THENCE bearing S 29-30-26.795 W a distance of 1683.93 feet;

THENCE bearing S 52-57-3.186 E a distance of 66.77 feet;

THENCE bearing S 11-40-22.502 W a distance of 444.94 feet;

THENCE bearing S 18-37-40.909 W a distance of 204.70 feet;

THENCE bearing S 28-32-35.538 W a distance of 56.02 feet;

THENCE bearing S 21-7-28.607 W a distance of 131.08 feet;

THENCE bearing S 20-2-57.906 W a distance of 328.45 feet;

THENCE bearing S 17-24-27.324 W a distance of 279.17 feet;

THENCE bearing N 41-9-3.909 W a distance of 177.33 feet;

THENCE bearing S 9-13-8.680 W a distance of 4720.93 feet;

THENCE along a curve to the RIGHT, having a radius of 10006.03 feet a delta angle of $10^{\circ} 03' 00''$, and whose long chord bears S 14-17-33.800 W a distance of 1752.87 feet;

THENCE bearing S 19-19-3.886 W a distance of 1288.22 feet;

THENCE along a curve to the RIGHT, having a radius of 10006.00 feet a delta angle of $04^{\circ} 50' 42''$, and whose long chord bears S 21-44-24.990 W a distance of 845.88 feet;

THENCE bearing S 24-9-46.094 W a distance of 2072.74 feet;

THENCE along a curve to the RIGHT, having a radius of 10006.00 feet a delta angle of $05^{\circ} 49' 11''$, and whose long chord bears S 27-4-21.428 W a distance of 1015.89 feet;

THENCE bearing S 29-58-56.761 W a distance of 3324.56 feet;

THENCE along a curve to the RIGHT, having a radius of 8006.00 feet a delta angle of $32^{\circ} 44' 56''$, and whose long chord bears S 46-21-24.638 W a distance of 4513.99 feet;

THENCE along a curve to the LEFT, having a radius of 8494.00 feet a delta angle of $31^{\circ} 13' 53''$, and whose long chord bears S 47-6-56.239 W a distance of 4572.87 feet;

THENCE along a curve to the RIGHT, having a radius of 6906.00 feet a delta angle of $31^{\circ} 18' 14''$, and whose long chord bears S 47-9-6.907 W a distance of 3726.38 feet;

THENCE bearing S 62-48-13.851 W a distance of 22.99 feet.

THENCE bearing S 24-0-48.302 E a distance of 26.26 feet;

THENCE bearing S 63-4-16.655 W a distance of 231.98 feet.

THENCE bearing S 84-40-7.199 W a distance of 67.50 feet;

THENCE bearing S 62-48-13.851 W a distance of 559.43 feet;

THENCE along a curve to the LEFT, having a radius of 9744.00 feet a delta angle of $22^{\circ} 55' 10''$, and whose long chord bears S 51-20-38.814 W a distance of 3871.86 feet;

THENCE bearing S 39-53-3.778 W a distance of 7413.18 feet;

THENCE along a curve to the LEFT, having a radius of 11994.00 feet a delta angle of $07^{\circ} 31' 02''$, and whose long chord bears S 36-7-32.827 W a distance of 1572.48 feet;

THENCE bearing S 32-22-1.877 W a distance of 1999.36 feet;

THENCE along a curve to the RIGHT, having a radius of 12006.00 feet a delta angle of $05^{\circ} 21' 38''$, and whose long chord bears S 35-2-51.086 W a distance of 1122.89 to the point of BEGINNING.

Part 2

SOUTH LIGNITE STOCKPILE AREA - 31.586 ACRES

BEGINNING at a point whose Northing is 326332.703 and whose Easting is 3017971.037;

THENCE bearing S 70-10-59.838 E a distance of 645.86 feet;

THENCE bearing S 5-30-27.153 E a distance of 249.33 feet;

THENCE bearing S 15-7-46.415 W a distance of 229.21 feet;

THENCE bearing S 31-28-49.481 W a distance of 625.28 feet;

THENCE bearing S 27-28-16.152 W a distance of 1277.97 feet;

THENCE bearing S 50-35-53.214 W a distance of 390.98 feet;

THENCE bearing N 4-46-46.423 E a distance of 728.51 feet;

THENCE bearing N 16-33-46.536 E a distance of 515.92 feet;

THENCE bearing N 21-51-1.878 E a distance of 509.95 feet;

THENCE bearing N 13-51-21.339 E a distance of 614.10 feet;

THENCE bearing N 17-59-0.087 E a distance of 329.77 feet to the point of BEGINNING containing 31.586 Acres.

100' PACIFIC COAST HIGHWAY
W 200' TURBINE
BEGINNING WHERE
CONTINUATION OF
PROPERTY OF JAMES
HILL FARM IS LOCATED

100' 124' 100' 20'

EXECUTION COPY

STATE OF TEXAS

**COUNTIES OF MILAM
AND LEE**

1772-1

**MEMORANDUM OF
RESTATED AND AMENDED
GROUND LEASE**

THIS MEMORANDUM OF RESTATED AND AMENDED GROUND LEASE ("Memorandum") is executed as of October 10, 2017 to be effective as of the Effective Date set forth below by and between Alcoa USA Corp., 201 Isabella Street, Pittsburgh, Pennsylvania 15212 ("Alcoa USA"), a Delaware corporation, and Luminant Mining Company LLC, 6555 Sierra Drive, Irving, Texas 75039 ("Luminant Mining"), a Texas limited liability company.

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Notice is hereby given that dated as of October 10, 2017 and effective as of October 1, 2017 ("Effective Date"), Alcoa USA and Luminant Mining entered into an Amended and Restated Ground Lease ("Amended Lease") by which Alcoa USA leased to Luminant Mining certain real property ("Leased Premises") owned by Alcoa USA and located within the boundaries of Alcoa USA's property in Lee and Milam Counties, Texas. The Leased Premises are more particularly described in Exhibit A attached hereto, and are to be utilized by Luminant Mining in order to operate, maintain and reclaim certain coal facilities owned by Luminant Mining located in Lee and Milam Counties, Texas. True and complete copies of the Amended Lease are in the possession of both Alcoa USA and Luminant Mining, and the specific terms and provisions of the Amended Lease are contained therein. This Memorandum is executed for the sole purpose of giving record notice of the Amended Lease in lieu of recording the same in its entirety.

Any sale of the Leased Premises, or any portion thereof, shall be made subject to the terms and provisions of the Amended Lease, and shall require the assumption by the purchaser of all of Alcoa USA's rights and obligations under the Amended Lease.

[Signatures on following pages]

VOL. 1320 PAGE 357
OFFICIAL RECORDS
WILMINGTON TEXAS

ACTIVITÉ 22/11/2022

The document to which this certificate is affixed is a full, true and correct copy of the original on file and of record in my office.

OCT 17 2017



Sharon Blasie
SHARON BLASIE
PO BOX 10000, LOS GOLLOS, TEXAS

IN WITNESS WHEREOF, Alcoa USA and Luminant Mining have executed this Memorandum to be effective as of the Effective Date.

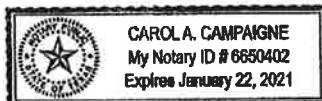
ALCOA USA CORP.

By: Tommy E. Hodges
Name: Tommy E. Hodges
Title: ATTORNEY-IN-FACT

STATE OF TEXAS §
 §
COUNTY OF TRAVIS §

This instrument was acknowledged before me on the 10 day of October, by Tommy E. Hodges, Attorney-In-Fact of Alcoa USA Corp. on behalf of the same.

Carola Campaigne
NOTARY PUBLIC FOR THE STATE OF TEXAS



Signature Page

The document to which this certificate is affixed is a full, true and correct copy of the original on file and of record in my office.

OCT 17 2017

VOL. 1320 PAGE 353
OFFICIAL RECORDS
BLAM COUNTY, TEXAS



Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

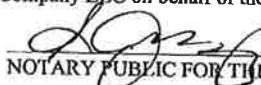
LUMINANT MINING COMPANY LLC

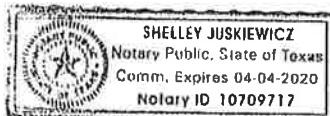
By:

By: 
Name: Matt Goenning
Title: 1

STATE OF TEXAS §
 §
COUNTY OF DALLAS §

This instrument was acknowledged before me on the 10th day of October, by October,
Matt Goenning of Luminant Mining Company LLC on behalf of the same.


NOTARY PUBLIC FOR THE STATE OF TEXAS



Signature Page

The document to which this certificate is
affixed is a full, true and correct copy of the
original on file and of record in my office.

VOL 1320 PAGE 350
OFFICIAL RECORDS
WILLIAM COUNTY, TEXAS

OCT 17 2017



Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

Exhibit A

Leased Premises

Totaling 61.57 acres in Two Parts

Part 1
CONVEYOR CORRIDOR AREA 2 - 29.984 ACRES

BEGINNING at a point whose Northing is 289688.367 and whose Easting is 2991829.895; THENCE bearing S 37-43-42.900 W a distance of 4900.58 feet; THENCE bearing N 21-17-54.052 W a distance of 14.00 feet; THENCE bearing N 37-43-42.900 E a distance of 4893.38 feet; THENCE along a curve to the LEFT, having a radius of 11994.00 feet a delta angle of 05° 21' 38", and whose long chord bears N 35-2-51.086 E a distance of 1121.77 feet; THENCE bearing N 32-22-1.877 E a distance of 1999.36 feet; THENCE along a curve to the RIGHT, having a radius of 12006.00 feet a delta angle of 07° 31' 02", and whose long chord bears N 36-7-32.827 E a distance of 1574.06 feet; THENCE bearing N 39-53-3.778 E a distance of 7413.18 feet; THENCE along a curve to the RIGHT, having a radius of 9756.00 feet a delta angle of 22° 55' 10", and whose long chord bears N 51-20-38.814 E a distance of 3876.63 feet; THENCE bearing N 62-48-13.851 E a distance of 410.90 feet; THENCE bearing N 48-14-23.755 E a distance of 196.78 feet; THENCE bearing N 51-34-14.394 E a distance of 86.57 feet; THENCE bearing N 66-22-1.369 E a distance of 127.00 feet; THENCE bearing S 85-10-5.674 E a distance of 52.89 feet; THENCE bearing S 24-0-48.302 E a distance of 30.45 feet; THENCE bearing N 62-48-13.851 E a distance of 22.32 feet; THENCE along a curve to the LEFT, having a radius of 6894.00 feet a delta angle of 31° 18' 14", and whose long chord bears N 47-9-6.907 E a distance of 3719.90 feet; THENCE along a curve to the RIGHT, having a radius of 8506.00 feet a delta angle of 31° 13' 53", and whose long chord bears N 47-6-56.239 E a distance of 4579.33 feet; THENCE along a curve to the LEFT, having a radius of 7994.00 feet a delta angle of 32° 44' 56", and whose long chord bears N 46-21-24.638 E a distance of 4507.22 feet;

The document to which this certificate is affixed is a full, true and correct copy of the original on file and of record in my office.

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OCT 17 2017
Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing N 29-58-56.761 E a distance of 3324.56 feet;
THENCE along a curve to the LEFT, having a radius of 9994.00 feet a delta angle of 05° 49' 11", and whose long chord bears N 27-4-21.428 E a distance of 1014.67 feet;
THENCE bearing N 24-9-46.094 E a distance of 2072.74 feet;
THENCE along a curve to the LEFT, having a radius of 9994.00 feet a delta angle of 04° 50' 42", and whose long chord bears N 21-44-24.990 E a distance of 844.86 feet;
THENCE bearing N 19-19-3.886 E a distance of 1288.22 feet;
THENCE along a curve to the LEFT, having a radius of 9993.97 feet a delta angle of 10° 03' 00", and whose long chord bears N 14-17-33.906 E a distance of 1750.76 feet;
THENCE bearing N 9-13-8.680 E a distance of 4725.03 feet;
THENCE bearing N 8-26-7.994 W a distance of 304.56 feet;
THENCE bearing N 19-58-3.386 E a distance of 417.17 feet;
THENCE bearing N 62-32-44.851 W a distance of 30.17 feet;
THENCE bearing N 34-24-14.686 E a distance of 49.27 feet;
THENCE bearing S 52-20-3.250 E a distance of 29.76 feet;
THENCE bearing N 44-39-53.915 E a distance of 143.44 feet;
THENCE bearing N 27-5-29.419 E a distance of 108.15 feet;
THENCE bearing S 57-17-16.094 E a distance of 14.31 feet;
THENCE bearing N 29-30-26.795 E a distance of 2064.40 feet;
THENCE bearing N 54-6-32.983 W a distance of 63.00 feet;
THENCE bearing N 31-41-35.971 E a distance of 113.23 feet;
THENCE bearing N 89-38-52.162 E a distance of 68.09 feet;
THENCE bearing N 30-23-6.994 E a distance of 2400.62 feet;
THENCE bearing N 5-57-14.333 E a distance of 63.05 feet;
THENCE bearing N 18-27-0.236 W a distance of 53.34 feet;
THENCE bearing N 47-2-46.206 W a distance of 46.13 feet;
THENCE bearing N 20-4-21.187 E a distance of 51.42 feet;
THENCE bearing S 75-22-49.752 E a distance of 107.34 feet;
THENCE bearing N 14-37-10.248 E a distance of 2340.45 feet;

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affixed is a full, true and correct copy of the
original on file and of record in my office.

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MILAM COUNTY, TEXAS

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Sharon Blasig
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COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing N 75-0-24.024 W a distance of 70.08 feet;
THENCE bearing N 14-24-42.429 E a distance of 60.97 feet;
THENCE bearing S 71-25-47.870 E a distance of 70.46 feet;
THENCE bearing N 14-37-10.248 E a distance of 498.62 feet;
THENCE bearing N 73-45-53.766 W a distance of 75.72 feet;
THENCE bearing N 10-18-48.582 E a distance of 53.53 feet;
THENCE bearing S 80-22-14.267 E a distance of 42.94 feet;
THENCE bearing N 1-42-40.200 E a distance of 53.49 feet;
THENCE bearing N 43-5-39.781 W a distance of 50.27 feet;
THENCE bearing N 66-49-9.109 W a distance of 36.49 feet;
THENCE bearing N 26-9-55.770 E a distance of 63.43 feet;
THENCE bearing S 66-7-55.086 E a distance of 61.14 feet;
THENCE bearing N 65-17-45.578 E a distance of 122.20 feet;
THENCE bearing N 19-55-12.040 W a distance of 49.23 feet;
THENCE bearing N 70-31-45.883 E a distance of 55.06 feet;
THENCE bearing S 26-5-17.199 E a distance of 82.56 feet;
THENCE bearing N 63-54-42.801 E a distance of 1797.68 feet;
THENCE bearing N 24-45-51.814 W a distance of 124.89 feet;
THENCE bearing N 59-42-37.368 E a distance of 60.12 feet;
THENCE bearing S 36-26-0.262 E a distance of 122.98 feet;
THENCE bearing N 48-16-29.182 E a distance of 1991.82 feet;
THENCE bearing N 44-54-1.299 W a distance of 74.22 feet;
THENCE bearing N 46-39-41.856 E a distance of 60.50 feet;
THENCE bearing S 41-43-30.818 E a distance of 75.81 feet;
THENCE bearing N 48-16-29.182 E a distance of 252.92 feet;
THENCE bearing N 41-42-30.537 W a distance of 41.72 feet;
THENCE bearing N 42-47-36.762 E a distance of 27.97 feet;
THENCE bearing N 44-44-42.965 W a distance of 69.87 feet;

The document to which this certificate is
affixed is a full, true and correct copy of the
original on file and of record in my office.

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LEE COUNTY, TEXAS

OCT 17 2017



Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing N 47-43-35.563 E a distance of 58.94 feet;
THENCE bearing S 48-42-57.946 E a distance of 61.41 feet;
THENCE bearing S 41-44-2.714 E a distance of 53.77 feet;
THENCE bearing N 48-15-57.286 E a distance of 671.14 feet;
THENCE bearing N 41-44-2.714 W a distance of 78.02 feet;
THENCE bearing N 51-27-56.969 E a distance of 45.85 feet;
THENCE bearing S 41-44-2.714 E a distance of 75.46 feet;
THENCE bearing N 48-15-57.286 E a distance of 1174.23 feet;
THENCE bearing N 41-13-10.457 W a distance of 11.26 feet;
THENCE bearing N 47-59-8.289 E a distance of 85.70 feet;
THENCE bearing S 41-44-51.852 E a distance of 11.67 feet;
THENCE bearing N 48-15-8.148 E a distance of 2287.68 feet;
THENCE bearing N 38-46-35.977 E a distance of 112.69 feet;
THENCE bearing S 69-24-21.701 E a distance of 14.76 feet;
THENCE bearing N 20-35-38.299 E a distance of 1630.48 feet;
THENCE bearing N 9-44-41.810 W a distance of 91.02 feet;
THENCE bearing N 50-44-4.308 W a distance of 23.25 feet;
THENCE bearing N 26-35-4.397 E a distance of 36.57 feet;
THENCE bearing S 59-3-28.554 E a distance of 22.26 feet;
THENCE bearing S 64-30-33.337 E a distance of 46.40 feet;
THENCE bearing N 39-11-46.892 E a distance of 2033.08 feet;
THENCE bearing N 35-6-54.885 E a distance of 114.18 feet;
THENCE bearing N 20-6-15.829 W a distance of 95.90 feet;
THENCE bearing N 34-2-53.439 E a distance of 13.83 feet;
THENCE bearing S 79-25-2.031 E a distance of 9.83 feet;
THENCE bearing N 64-47-54.872 E a distance of 8.36 feet;
THENCE bearing S 25-12-5.128 E a distance of 65.14 feet;
THENCE bearing S 22-30-25.971 E a distance of 155.00 feet;

The document to which this certificate is
affixed is a full, true and correct copy of the
original on file and of record in my office.

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WILLIAM COUNTY, TEXAS

OCT 17 2017


Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing S 62-53-16.141 W a distance of 39.83 feet;
THENCE bearing N 43-31-45.146 W a distance of 88.34 feet;
THENCE bearing S 39-11-46.892 W a distance of 2105.44 feet;
THENCE bearing S 20-35-38.299 W a distance of 1745.95 feet;
THENCE bearing S 48-15-8.148 W a distance of 172.69 feet;
THENCE bearing S 41-44-51.852 E a distance of 63.07 feet;
THENCE bearing S 51-21-53.101 W a distance of 50.72 feet;
THENCE bearing N 41-44-51.852 W a distance of 60.31 feet;
THENCE bearing S 48-15-8.148 W a distance of 2189.38 feet;
THENCE bearing S 41-44-51.852 E a distance of 32.74 feet;
THENCE bearing S 50-29-14.412 W a distance of 26.97 feet;
THENCE bearing N 41-44-2.714 W a distance of 31.70 feet;
THENCE bearing S 48-15-57.286 W a distance of 1967.60 feet;
THENCE bearing S 48-16-29.182 W a distance of 1.27 feet;
THENCE bearing S 41-43-30.818 E a distance of 68.11 feet;
THENCE bearing S 48-16-29.182 W a distance of 57.22 feet;
THENCE bearing N 41-43-30.819 W a distance of 2.21 feet;
THENCE bearing N 41-43-30.818 W a distance of 65.91 feet;
THENCE bearing S 48-16-29.182 W a distance of 76.44 feet;
THENCE bearing S 41-43-30.818 E a distance of 46.35 feet;
THENCE bearing S 50-47-12.738 W a distance of 63.10 feet;
THENCE bearing N 41-43-30.818 W a distance of 43.58 feet;
THENCE bearing S 48-16-29.182 W a distance of 2081.21 feet;
THENCE bearing S 41-43-30.818 E a distance of 59.18 feet;
THENCE bearing S 48-50-19.425 W a distance of 64.97 feet;
THENCE bearing N 48-32-44.984 W a distance of 58.95 feet;
THENCE bearing S 48-16-29.182 W a distance of 40.79 feet;
THENCE bearing S 63-54-42.801 W a distance of 1996.46 feet;

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OCT 17 2017


Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing S 14-37-10.248 W a distance of 2817.18 feet;
THENCE bearing S 75-22-49.752 E a distance of 64.37 feet;
THENCE bearing S 12-24-20.440 W a distance of 72.59 feet;
THENCE bearing N 76-35-33.755 W a distance of 67.19 feet;
THENCE bearing S 14-37-10.248 W a distance of 250.02 feet;
THENCE bearing S 30-23-6.994 W a distance of 2506.14 feet;
THENCE bearing S 37-27-26.533 E a distance of 89.49 feet;
THENCE bearing S 41-42-5.090 W a distance of 87.64 feet;
THENCE bearing N 73-22-3.786 W a distance of 66.54 feet;
THENCE bearing S 29-30-26.795 W a distance of 1683.93 feet;
THENCE bearing S 52-57-3.186 E a distance of 66.77 feet;
THENCE bearing S 11-40-22.502 W a distance of 444.94 feet;
THENCE bearing S 18-37-40.909 W a distance of 204.70 feet;
THENCE bearing S 28-32-35.538 W a distance of 56.02 feet;
THENCE bearing S 21-7-28.607 W a distance of 131.08 feet;
THENCE bearing S 20-2-57.906 W a distance of 328.45 feet;
THENCE bearing S 17-24-27.324 W a distance of 279.17 feet;
THENCE bearing N 41-9-3.909 W a distance of 177.33 feet;
THENCE bearing S 9-13-8.680 W a distance of 4720.93 feet;
THENCE along a curve to the RIGHT, having a radius of 10006.03 feet a delta angle of 10° 03' 00", and whose long chord bears S 14-17-33.800 W a distance of 1752.87 feet;
THENCE bearing S 19-19-3.886 W a distance of 1288.22 feet;
THENCE along a curve to the RIGHT, having a radius of 10006.00 feet a delta angle of 04° 50' 42", and whose long chord bears S 21-44-24.990 W a distance of 845.88 feet;
THENCE bearing S 24-9-46.094 W a distance of 2072.74 feet;
THENCE along a curve to the RIGHT, having a radius of 10006.00 feet a delta angle of 05° 49' 11", and whose long chord bears S 27-4-21.428 W a distance of 1015.89 feet;
THENCE bearing S 29-58-56.761 W a distance of 3324.56 feet;
THENCE along a curve to the RIGHT, having a radius of 8006.00 feet a delta angle of 32° 44' 56", and whose long chord bears S 46-21-24.638 W a distance of 4513.99 feet;

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The document to which this certificate is
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OCT 17 2017



Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE along a curve to the LEFT, having a radius of 8494.00 feet a delta angle of $31^\circ 13' 53''$, and whose long chord bears S 47-6-56.239 W a distance of 4572.87 feet;

THENCE along a curve to the RIGHT, having a radius of 6906.00 feet a delta angle of $31^\circ 18' 14''$, and whose long chord bears S 47-9-6.907 W a distance of 3726.38 feet;

THENCE bearing S 62-48-13.851 W a distance of 22.99 feet;

THENCE bearing S 24-0-48.302 E a distance of 26.26 feet;

THENCE bearing S 63-4-16.655 W a distance of 231.98 feet;

THENCE bearing S 84-40-7.199 W a distance of 67.50 feet;

THENCE bearing S 62-48-13.851 W a distance of 559.43 feet;

THENCE along a curve to the LEFT, having a radius of 9744.00 feet a delta angle of $22^\circ 55' 10''$, and whose long chord bears S 51-20-38.814 W a distance of 3871.86 feet;

THENCE bearing S 39-53-3.778 W a distance of 7413.18 feet;

THENCE along a curve to the LEFT, having a radius of 11994.00 feet a delta angle of $07^\circ 31' 02''$, and whose long chord bears S 36-7-32.827 W a distance of 1572.48 feet;

THENCE bearing S 32-22-1.877 W a distance of 1999.36 feet;

THENCE along a curve to the RIGHT, having a radius of 12006.00 feet a delta angle of $05^\circ 21' 38''$, and whose long chord bears S 35-2-51.086 W a distance of 1122.89 to the point of BEGINNING.

Part 2
SOUTH LIGNITE STOCKPILE AREA - 31.586 ACRES

BEGINNING at a point whose Northing is 326332.703 and whose Easting is 3017971.037;

THENCE bearing S 70-10-59.838 E a distance of 645.86 feet;

THENCE bearing S 5-30-27.153 E a distance of 249.33 feet;

THENCE bearing S 15-7-46.415 W a distance of 229.21 feet;

THENCE bearing S 31-28-49.481 W a distance of 625.28 feet;

THENCE bearing S 27-28-16.152 W a distance of 1277.97 feet;

THENCE bearing S 50-35-53.214 W a distance of 390.98 feet;

THENCE bearing N 4-46-46.423 E a distance of 728.51 feet;

THENCE bearing N 16-33-46.536 E a distance of 515.92 feet;

THENCE bearing N 21-51-1.878 E a distance of 509.95 feet;

The document to which this certificate is
affixed is a full, true and correct copy of the
original on file and of record in my office.

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 *Sharon Blasig*
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TEXAS

THENCE bearing N 13-51-21.339 E a distance of 614.10 feet;
THENCE bearing N 17-59-0.087 E a distance of 329.77 feet to the point of BEGINNING
containing 31.586 Acres.

CLERK'S NOTICE: ANY PROVISION HEREIN WHICH RESTRICTS THE SALE, RENTAL OR USE OF THE DESCRIBED
REAL PROPERTY BECAUSE OF COLOR OR RACE, IS INVALID AND UNENFORCEABLE UNDER FEDERAL LAW.

FILED
AT 1:40 O'CLOCK P M
ON THE 17 DAY OF OCT
A.D., 20 17

Barbara Vansa
COUNTY CLERK, MILAM COUNTY, TEXAS

Granite Rockcatt
BY *Haley Bonnaffon* DEPUTY

11/6/17/K

STATE OF TEXAS
COUNTY OF MILAM
I hereby certify that this instrument was FILED on the date
and at the time stamped hereon by me and was duly
RECORDED in the Volume and Page of the Official Records
of Milam County, Texas.

Barbara Vansa
County Clerk, Milam County, Texas
VOL 1320 PAGE 367
RECORDED 10/17/17 9:58 AM
BY *Haley Bonnaffon* DEPUTY

10/17/2017 at 9:07 AM
2017-03389
FILED FOR RECORD
SHARON BLASIG
COUNTY CLERK
LEE COUNTY, TX

The document to which this certificate is
affixed is a full, true and correct copy of the
original on file and of record in my office.

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MILAM COUNTY, TEXAS

OCT 17 2017
Sharon Blasig
SHARON BLASIG
COUNTY CLERK, LEE COUNTY, TX

Puccio, Karolyn K.

From: Renee Vick <Renee.Vick@rrc.texas.gov>
Sent: Monday, October 23, 2017 10:52 AM
To: Hodges, Tommy; Tomecek, Terrill; Puccio, Karolyn K.; Hill, Dennis W. (Hill Engineering)
Cc: Scott Engelmann
Subject: EXT: SA1G letter from Kingsley
Attachments: SA1G Rev 70 Proposed Permanent Roads.pdf

Thanks.

Renee Vick
Administrative Assistant III
Surface Mining and Reclamation Division
Railroad Commission of Texas
512-463-6900



CHRISTI CRADDICK, CHAIRMAN
RYAN SUTTON, COMMISSIONER
WAYNE CHRISTIAN, COMMISSIONER



J. DENNY KINGSLY, P.E., DIRECTOR

RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

October 23, 2017

Sent by Email

Mr. Tommy Hodges
Energy Manager
Alcoa Inc.
P. O. Box 1491
Rockdale, Texas 76567-1491

RE: Sandoval Mine, Permit No. 1G
Revision No. 70
Proposed Permanent Roads

Dear Mr. Hodges:

Review of Revision No. 70, submitted by letter dated September 21, 2017, is complete. Alcoa requests approval of detailed design plans for roads South Haulroad, Pond 006 Access, and County Road 460 Access. Alcoa provided a \$500 revision-application filing fee with the application. A copy of Staff's technical review memorandum is enclosed. The revision application is considered complete and is accepted for filing.

This application is considered a revision to Permit No. 1G because the permanent status for roads South Haulroad, Pond 006 Access, and County Road 460 Access differ from the approved detailed design plans. I find that the application does not constitute a significant departure from the approved reclamation plan in accordance with §12.226. Roads South Haulroad, Pond 006 Access, and County Road 460 Access meet the specifications detailed at 16 TEXAS ADMIN. CODE §12.154, §12.400 and §12.401. Revision No. 70 is approved and your permit is revised accordingly.

Should there be any questions, please do not hesitate to call me or Joseph Parks, Technical Coordinator for review of this application.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Denny Kingsley".

J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division

JDK/JWP/rv
Enclosure
File Reference No. 1726401



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

MEMORANDUM

TO: J. Denny Kingsley, P.E. Director *th*

THRU: Travis L. Wootton, Assistant Director *JW*
Timothy G. Walter, P.G., Manager, Applications and Permits
Adam Krabbenhoft, Engineering Specialist *ARK*

FROM: Joseph Parks, Engineering Specialist *JP*

SUBJECT: Alcoa Inc.
Sandow Mine, Permit No. 1G
Revision No. 70
Proposed Permanent Roads

DATE: October 23, 2017

Alcoa submitted Revision No. 70 by letter dated September 21, 2017. Alcoa requests approval of detailed design plans for road termed the South Haulroad, Pond 006 Access, and County Road 460 Access. A \$500 revision-application filing fee was included with the application. My technical review and a summary of the proposal follow:

PROPOSAL SUMMARY

Alcoa's design proposal includes a design certification letter, introduction, description, table of structure details, culvert hydraulic analyses, plan and profiles and typical cross-section drawings. The details of the proposed permanent structures are depicted on *Proposed Permanent Road Plan View* and *Proposed Permanent Profile and Sections*. Specific design details for the proposed structures are provided on the attached structure summary sheets.

South Haulroad was approved initially on December 15, 1997, as temporary structure. Numerous cross-drainage structures exist on the road, including a multi-plate arch crossing County Road 313, a multi-plate structure crossing Walleye Creek and a concrete bridge crossing Cross Creek. Detailed designs of these structures were previously approved and are summarized in Table 1. For those culverts where the original hydraulic designs could not be found, Alcoa provided as-built analyses of the culverts located at Stations 101+25, 113+50 and 255+00. Pond 006 Access is a former portion of the South Haulroad that was narrowed to 20 feet. This road provides access to Pond 006 and the north side of the conveyor system. The roadway and multiple structures were originally approved in 1996. County Road 460 Access provides access to the public road from Pond 006 Access. The road has one low-water crossing of Walleye Creek and was approved September 20, 2002.

PROPOSAL EVALUATION

This submittal is considered a revision to Permit No. 1G because detailed design plans for the proposed permanent roads differ from the approved detailed design plans.

Staff's review of the application and SMRD files indicates the following:

- a. Alcoa owns all of the property affected by the proposed activities; therefore, no adverse impacts to private landowners are anticipated;
- b. There are no protected cultural resource sites that will be affected;
- c. The approved probable hydrologic consequences (PHC) determination will not be affected;
- d. No operations are proposed within 300 feet of a public building, school, church, occupied dwelling, community or institutional building;
- e. No operations are proposed within 100 feet of a cemetery;
- f. No operations are proposed within 100 feet of a public road (as measured from the outside right-of-way), except as allowed at §12.71(a)(4); and
- g. No operations are proposed within or adjacent to lands within the boundaries of the National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, or the Wild and Scenic Rivers System.

The requirements of §12.154, §12.400 and §12.401 have been met for South Haulroad, Pond 006 Access, and County Road 460 Access. The information evaluated during my review of Revision No. 70 is described on the attached review summary sheets.

I recommend approval of Revision No. 70. Feel free to contact me if you have questions.



Joseph Parks

JWP/rv
Attachment
File Reference No. 1726401

Road Summary

Reviewer name: Joseph Parks	
Mine name: Sadow Mine	
Permit No.: 1G	Revision No.: 70
File Reference No.: 1726401	
Structure name: South Haulroad	

Primary or Ancillary? Primary If ancillary, was this previously a public road? N/A If yes, which road? N/A	Temporary or Permanent? Permanent If temporary, reclamation date:
Length: 42,500 ft	Width: 60-80 ft
Driving surface material: crushed limestone	
Side slopes: 2% pavement crown slope	
Design rainfall event: 10-yr/6-hr (4.8 inches of precipitation)	

Approximate Station	Culvert Size/Number	Flow Rate, CFS	RRC Project ID	Approval Date
5+00	Multi-Plate Arch	N/A	200302402	3/18/2004
18+00	36" RCP / 2	17.8	200423801	10/21/2004
62+00	11.5' x 7.3' Arch / 1	460.54	200421202	9/22/2004
101+25	36" RCP / 4	63.18*	200220702	11/4/2002
113+50	36" RCP / 2	63.47	200220702	11/4/2002
139+00	42" RCP / 4	306.5	199813101	6/4/1998
161+00	36" RCP / 2	31.5		10/27/1994
171+00	36" RCP / 1	77.5		10/27/1994
177+50	36" RCP / 1	73.5		10/27/1994
186+00	36" RCP / 1	37.8		10/27/1994
196+50	36" RCP / 2	83.2		10/27/1994
228+50	25.75' x 8.58' / 5	7,533	200608602	6/20/2006
236+50	Concrete Overflow	N/A	200608602	6/20/2006
255+00	48" RCP / 2	150.58*	200220702	11/4/2002
301+50	5' x 5' Box / 4	568.73	C14-0017-SC01-C	8/19/2009
325+00	Underpass	N/A	200125304	10/11/2001
362+50	3' x 2' / 2	53.66	201716401	7/14/2017
371+50	Bridge	22,249	200101204	10/10/2002

Note: *Original Flow design was not found. Analysis provided in this revision.

Road Summary

Reviewer name: Joseph Parks
Mine name: Sandow Mine
Permit No.: 1G Revision No.: 70
File Reference No.: 1726401
Structure name: Pond 006 Access

Primary or Ancillary? Primary If ancillary, was this previously a public road? N/A If yes, which road? N/A	Temporary or Permanent? Permanent If temporary, reclamation date:
Length: 5,400 ft	Width: 20 ft
Driving surface material: crushed limestone	
Side slopes: 2% pavement crown slope	
Design rainfall event: 10-yr/6-hr (4.8 inches of precipitation)	

Approximate Station	Culvert Size/Number	Flow Rate, CFS	RRC Project ID	Approval Date
27+50	48" CMP / 2	147.67	199813101	6/4/1998
37+00	48" CMP / 2	38.76	199813101	6/4/1998

Note:

Road Summary

Reviewer name: Joseph Parks	
Mine name: Sandow Mine	
Permit No.: 1G	Revision No.: 70
File Reference No.: 1726401	
Structure name: County Road 460 Access	

Primary or Ancillary? Primary If ancillary, was this previously a public road? N/A If yes, which road? N/A	Temporary or Permanent? Permanent If temporary, reclamation date:
Length: 458 ft	Width: 20 ft
Driving surface material: crushed limestone	
Side slopes: 2% pavement crown slope	
Design rainfall event: 10-yr/6-hr (4.8 inches of precipitation)	

Approximate Station	Culvert Size/Number	Flow Rate, CFS	RRC Project ID	Approval Date
3+37	Concrete LWC	20	200220702	9/20/2002

Notes:

<u>Road Checklist</u>		
Reviewer name: Joseph Parks		
Mine name: Sandow Mine		
Permit No.: 1G	Revision No.: 70	File Reference No.: 1726401
Structure Name: South Haulroad		
Regulation	Meets?	Information Reviewed and/or Notes
§12.71(a)(4)	Yes (Y)	Revision No. 70
§12.108	Y	Revision No. 70, payment made.
§12.117	Y	Permit No. 1G, section .136, Plate Nos. 136-A1 and A2.
§12.125(2)	Y	Permit No. 1G, section .125.
§12.144	Y	Permit No. 1G, section .121, USACE Nationwide Permit 21 No. 1999-00455.
§12.142(2)(C) and 12.145(b)(2)	Y	Revision No. 60, Plate 145-B2, disturbed rate, \$3,832 per acre and mined rate \$5,154.
§12.145(b)(3)	Y	Permit No. 1G, Plate Nos. 145-B4 and B5, generally supports.
§12.146(d)	Y	Permit No. 1G, section .146 (Less than 2,170 PHC acres).
§12.147	Y	Revision No. 59, Plate 147-1, sheet 1 of 2, pastureland alongside the roadway.
§12.154(b)	Y	Revision No. 70, certified by Dennis Wade Hill, P.E.
§12.355	Y	Revision No. 70, no streams in the area.
§12.382	Y	Revision No. 70, no pipelines in the area.
§12.399	Y	Revision No. 59, Plate 147-1, generally supports developed water resources.
§12.400(a)	Y	Revision No. 70, primary road.
§12.400(b)	Y	Revision No. 70, designed to minimize deterioration of the local and regional environment.
§12.400(c)	Y	Revision No. 70, designed for planned duration and use.
§12.400(d)	Y	Revision No. 70, road crosses the DD-7 Diversion intermittent stream that flows through the A-1 Culvert.
§12.401(2)	Y	N/A.
§12.401(3)(A)	Y	Revision No. 70, stable surfaces.
§12.401(3)(B)	Y	Revision No. 70, does not ford a perennial or intermittent stream.
§12.401(4)(A)	Y	N/A
§12.401(4)(B)	Y	N/A
§12.401(4)(C)	Y	N/A
§12.401(4)(D)	Y	Revision No. 70, will safely support roadway.
§12.401(5)	Y	Revision No. 70, 20-80 foot wide roadways with gravel surfaces.
Notes:		



RAILROAD COMMISSION OF TEXAS

SURFACE MINING AND RECLAMATION DIVISION

August 18, 2017

Sent by Email

Mr. Tommy E. Hodges
Energy Manager
Alcoa
P.O. Box 1491
Rockdale, Texas 76567

RE: Alcoa USA Corp. (Alcoa)
Sandow Mine, Permit No. 1G
Revision No. 68
Revised Postmine Land-Use Plan

Dear Mr. Hodges:

Initial review of Revision No. 68, submitted by letter dated July 12, 2017, is complete. Alcoa proposes to convert 561 acres of pastureland and fish and wildlife habitat land use to industrial/commercial (I/C) land use. A \$500 revision-application filing fee was provided with the application submittal.

I have determined that the application is deficient, as described below, and the 90-day administrative review period for this application is tolled to allow Alcoa an opportunity to provide a response to these concerns. After we receive your response, we will have 58 days to complete our review of the application.

- Further justification needs to be provided for the proposed I/C area to show that it meets the requirements of §12.399(a). This justification needs to be provided for the full width of the corridor. In particular, information on the I/C activities proposed within the existing fish and wildlife habitat and pastureland land-use areas needs to be provided.
- Copies of applicable portions from Luminant and Alcoa's lease regarding the I/C area needs to be provided.
- Documentation that the haul road has been permanent should also be provided.
- Justification for the pastureland land use for the area south of Pond RH1-B1, which was approved in Revision No. 36, needs to be provided. The area appears to be a developed water resource and should be depicted on the postmine land-use map as such unless there is justification for it being pastureland land use (e.g., if it is an approved small depression).
- Alcoa should identify any fish and wildlife enhancements that would remain within the I/C area, such as the existing tree motts, until such areas would be affected by I/C activities.

Please provide a response to these comments within 30 days of this letter to facilitate timely review of this submittal. Should you have any questions, do not hesitate to contact me or Katherine Upham, coordinator for this project.

Sincerely,

A handwritten signature in blue ink that reads "Travis L. Wootton".

Travis L. Wootton, Assistant Director
Surface Mining and Reclamation Division

TLW/KU/rv
File Reference No. 1719801

Katherine Upham

From: Hodges, Tommy
Sent: Friday, August 04, 2017 7:11 AM
To: Katherine Upham; Denny Kingsley; Travis Wootton
Cc: Tomecek, Terrill; Puccio, Karolyn K; Hill, Dennis W. (Hill Engineering); Xiaoyan Dai
Subject: Sandow - USACE SWF-1999-00455 question - Revision 68 PMLU
Attachments: Final Mitigation Close Out COE Itr Oct 2016.pdf

Katherine,

Attached is our most recent communications with USACE. Alcoa is currently updating this information and I expect that we will be scheduling a meeting with USACE in Ft. Worth next month to review.

Respectfully,

Tommy E. Hodges
Energy Manager
Alcoa @ Rockdale Operations
PO Box 1491
3990 John D. Harper Road
Rockdale, TX 76567
512-446-8419
512-446-8037 FAX



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From: Katherine Upham [mailto:katherine.upham@rrc.texas.gov]
Sent: Thursday, August 03, 2017 10:37 AM
To: Hodges, Tommy ; Denny Kingsley <Denny.Kingsley@rrc.texas.gov>; Travis Wootton <Travis.Wootton@rrc.texas.gov>
Cc: Tomecek, Terrill <>; Puccio, Karolyn K. ; Hill, Dennis W. (Hill Engineering) ; Tim Walter <Tim.Walter@rrc.texas.gov>; Xiaoyan Dai <Xiaoyan.Dai@rrc.texas.gov>; Celeste Brancel <Celeste.Brancel@rrc.state.tx.us>
Subject: EXT: RE: RE: RE: Sandow - USACE SWF-1999-00455 question - Revision 68 PMLU

I was just thinking of asking who owned the conveyor. August 17th should work.

Denny and Travis,

Please plan to discuss this PMLU revision in your meeting with Alcoa on the 17th. There is a proposal to revise 561 acres of pastureland and F&W to I/C, predominantly along Sandow's haul road and conveyor belt.

Tommy,

If you could send me the USACE information before then, that would help us get this revision out more quickly as we will be near the 30 day clock by the 17th and I am out of the office August 21-September 1 for training.

Thanks,
Katherine

From: Hodges, Tommy

Sent: Thursday, August 03, 2017 10:24 AM

To: Katherine Upham <katherine.upham@rrc.texas.gov>

Cc: Tomecek, Terrill

Puccio, Karolyn K.

>; Hill, Dennis W. (Hill

Engineering)

Tim Walter <Tim.Walter@rrc.texas.gov>; Xiaoyan Dai
<Xiaoyan.Dai@rrc.texas.gov>; Celeste Brancel <Celeste.Brancel@rrc.state.tx.us>

Subject: RE: RE: RE: Sandow - USACE SWF-1999-00455 question - Revision 68 PMLU

Katherine,

This is very helpful. We can't meet next week, but already have a meeting with Denny and Travis at 10:30 on August 17th at 10:30. Can we add these topics to our agenda for that meeting?

Dennis and I will bring maps and other information relevant to the I/C request. By the way the conveyor and the surface of the haul road (not the real estate) belong to Luminant mining and Three Oaks Mine.

Thanks,

Tommy E. Hodges



From: Katherine Upham [<mailto:katherine.upham@rrc.texas.gov>]

Sent: Thursday, August 03, 2017 9:28 AM

To: Hodges, Tommy

Cc: Tomecek, Terrill

; Puccio, Karolyn K.

>; Hill, Dennis W. (Hill

Engineering)

>; Tim Walter <Tim.Walter@rrc.texas.gov>; Xiaoyan Dai
<Xiaoyan.Dai@rrc.texas.gov>; Celeste Brancel <Celeste.Brancel@rrc.state.tx.us>

Subject: EXT: RE: RE: Sandow - USACE SWF-1999-00455 question - Revision 68 PMLU

Hi Tommy,

I am foremost looking for why this area is being proposed as I/C. You reference 'industrial activities' in your letter, but that is too vague for a change to I/C. There are a lot of areas that do not look like they would be used for I/C, (e.g., the areas between the haul road and conveyor belt or the areas along the haul road).

As this is such an unusual case, i.e., the haul road and conveyor belt are used by Three Oaks Mine, I think we need to get together with the SMRD team, likely Travis, Tim, and Xiaoyan, to discuss our options for how to handle this being categorized and eventually released. As it stands now, not enough information was provided for my PMLU review, and as we are on a clock, I would like to have this meeting ASAP. Travis is out this week, so next week would be optimal. As

we will be going over maps, it would be ideal if you all could come in, but I understand you are short staffed so a conference call may work.

Part of my PMLU review is USACE permit status. I check which areas were/are covered by USACE permits, and if any changes would affect said permits. I suggested the annual report as I know all permits are required to send USACE an annual report, and that is generally what most of the other mines send to us as an easy way to keep us in the loop.

A general list of topics would be:

- What is the intended I/C use?
- What is the haul road currently being used for?
- PMLU for a conveyor belt, haul road, coal loading stations
- Who is responsible for final reclamation of haul road – Alcoa or Luminant

Are you available next week to discuss?

Thanks,
Katherine

From: Hodges, Tommy
Sent: Thursday, August 03, 2017 8:51 AM
To: Katherine Upham <katherine.upham@rrc.texas.gov>
Cc: Tomecek, Terrill <[.](#)>; Puccio, Karolyn K. <[.](#)>; Hill, Dennis W. (Hill Engineering)
Subject: RE: RE: Sandow - USACE SWR-1999-00455 question

Katherine,

In response to your request, we have been stretched extremely thin over the past two months and in addition have a very limited staff here at Sandow. Dennis only works a couple of days per week and most of our other technical resource only work a few days per month.

In order to set up an effective meeting or conference call, it would be helpful to have your questions, discussion topics or any other data request in advance so I know which resources I need to have available and have time to coordinate their schedules. I understand your interested I USACE mitigation information in general but can you email your direct specific questions? In addition, what time frame are you looking to have a meeting?

Respectfully,

Tommy E. Hodges
Energy Manager
Alcoa @ Rockdale Operations
PO Box 1491
3990 John D. Harper Road
Rockdale, TX 76567
512-446-8419
512-446-8037 FAX
tommy.hodges@alcoa.com



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From: Katherine Upham [<mailto:katherine.upham@rrc.texas.gov>]

Sent: Wednesday, August 02, 2017 10:33 AM

To: Hill, Dennis W. (Hill Engineering) ; Hodges, Tommy <

Cc: Tomecek, Terrill < , Puccio, Karolyn K. <

Subject: EXT: RE: Sandow - USACE SWF-1999-00455 question

Hi,

There are a few concerns that have come up in reviewing Revision 68. Would it be possible to schedule a meeting or conference call with the SMRD team to discuss?

Thanks,

Katherine Upham

From: Katherine Upham

Sent: Thursday, July 27, 2017 3:00 PM

To

Cc:

Subject: USACE SWF-1999-00455 question

Good afternoon,

I am reviewing the proposed postmine landuse Revision 68 for the Sandow Mine. I am trying to track down the latest USACE information, and it looks like the latest we have is an update to USACE Permit SWF-1999-00455 for a final reclamation plan, dated October 2009, where there were some remaining acres to be mitigated. Could you please provide me with the current USACE information for Sandow? If you could send me the latest USACE annual report that would be helpful as well.

Thank you,

Katherine Upham

Natural Resources Specialist

Surface Mining and Reclamation Division

Railroad Commission of Texas

512-305-8826





Environmental Services, Inc.

20 October 2016

Mr. David Madden
US Army Corps of Engineers – Fort Worth
Regulatory Branch
819 Taylor Street, Room 3A37
Fort Worth, Texas 76102-0300

**RE: Sandow Surface Mine, Milam and Lee Counties, Texas
Completion of Mitigation under SPGP and NWP 21 Authorizations
Request for Mitigation Acceptance and Permit Closure
SWF-1999-00455
HJN 160081 PA**

Dear Mr. Madden:

This correspondence is in response to your October 3, 2013 email communication regarding our July 15, 2003 request for concurrence of mitigation completion and permit closure. In your email, you expressed concern for forested wetland reclamation areas that were newly planted (2-5 years old) at the time of our 2013 assessment. You requested additional monitoring when the 2-year old tree planting areas were at least 5 years old to demonstrate that they were on course to meet forested wetland criteria.

In 2016, we have conducted additional monitoring of the areas for which you expressed concern. Monitoring was conducted by random plot counts within the planting areas to determine stem counts of living trees. Furthermore, we also assessed some additional areas of forested wetland reclamation that were not previously accounted for in the 2013 assessment. The revised Table 5 from our 2013 report (now Table 1) is provided below with new tallies of wetland and waters of the US reclamation. Stem count data from the 2016 monitoring is provided in Attachment A along with maps of the monitoring areas showing the sample plots.

In some of the newly planted forested wetland areas from the 2013 assessment (Cottonwood/Walleye Creek drainages), we determined in the current monitoring effort that survival of planted trees and shrubs was somewhat low, averaging 78 trees/acre and 47 shrubs/acre in 2016 (Attachment A). In Table 1 below, we have identified these areas as "Low-Density, Forested Wetland" totaling 43.2 acres. While the density of surviving canopy species is somewhat low, the density would still score 0.6 in the riverine forested

Final Mitigation Close Out COE It Oct 2016

CORPORATE HEADQUARTERS
1507 South IH 35 ★ Austin, Texas 78741 ★ 512.328.2430 ★ Fax 512.328.1804 ★ www.horizon-esi.com
Certified HUB/DBE/SBE

iHGM. The surviving trees are now 5 to 8 years old and will begin producing seed annually (photos, Attachment B). We believe this density will eventually mature into a 100+ stem/acre forested wetland with natural recruitment and seed germination.

Other forested wetland areas from the 2013 assessment as well as some newly assessed forested areas currently exhibit average surviving stem counts of 200-300+ trees/acre and 100+ shrubs/acre. These areas are now 5 to 10+ years old (photos, Attachment B). These areas are noted in Table 1 as "High-Density Forested Wetland." Monitoring data for these areas is included in Attachment A.

As further explanation of Table 1 and the final 404 waters reclamation tally, the column denoted as "2016 Addition/Subtraction" reflects our 2016 reassessment. There were essentially no changes to stream corridors and ponds/lakes although many of the stream corridors were noted in 2016 to have a better defined OHWM due to natural stream incision since the reclamation occurred. We have denoted a 5.92 acre reduction in herbaceous wetland area that has now been reclassified as high-density forested wetland due to discovered tree growth above the dense herbaceous vegetation. Those areas were originally vegetated with very thick switchgrass and significant numbers of trees could not be found in 2013.

As noted above, the forested wetland category has been divided into "low-density" and "high-density." The 2016 deficit in "high-density" of -30.29 acre is a reflection of the separation of the "low-density" forested category (-43.2 ac) and the addition of 5.92 acres of previous herbaceous wetland, as well as 6.99 acres of newly found forested wetland in 2016. The new total forested wetland total in 2016 (low-density plus high-density) is 86.97 acres. Based on the mitigation requirement for forested wetland of 62.88 acres, this results in a net gain of 24.09 acres of forested wetland.

The herbaceous wetland category has a net gain of 215.56 acres over the mitigation requirement after the conversion of 5.92 acres to forested wetland.

The category of "Unclassified Wetland" was a reflection of the lack of differentiation of wetland types in the early permitting years of the mine. We submit that the net gains in herbaceous wetlands and forested wetlands in the final tally more than equal the "unclassified wetland" mitigation requirements. In total, 239.65 of excess wetlands (herbaceous and forested) have been created in the reclamation to make up for the 62.03 acres of "unclassified wetlands."

Overall, all jurisdictional water features considered, more than 1000 acres of excess jurisdictional waters have been created in the reclaimed mine beyond the permitted mitigation requirements.

We are herein requesting your concurrence of satisfactory completion of mitigation requirements and closeout of the permits for the Sandow Mine.

Additionally, for your records, Alcoa Inc. (current permittee) will divide into two new separate corporations as of November 1, 2016. The new entity that will own the Sandow Mine is **Alcoa USA Corp.** Alcoa USA Corp will assume all future responsibilities for permit compliance.

By this correspondence we request that you transfer the permit authorization along with all terms and conditions to Alcoa USA Corp for the duration of the project as originally permitted. All plans remain the same as previously permitted.

The contact information for the new transferee is as follows:

Alcoa USA Corp
Attn: Tommy Hodges
PO Box 1491
3990 John D. Harper Road
Rockdale, TX 76567
512-446-8419
512-446-8037 FAX

Please call me if you have any questions or require additional information.

Sincerely,
For Horizon Environmental Services, Inc.



C. Lee Sherrod
Vice President

C: Richard Burns, Alcoa Inc.
Tommy Hodges, Alcoa USA Corp.



ATTACHMENT A
2016 TREE INVENTORY DATA

SANDOW MINE TREE INVENTORY 2016

LOWER E-AREA END LAKE DRAINAGE

PLOT 1

TREES

Bald Cypress	5
Bur Oak	2
Cedar Elm	2
Cottonwood	1
Live Oak	1
Pecan	9
Persimmon	1
Walnut	1
Water Oak	7
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 2

TREES

Bald Cypress	4
Bur Oak	5
Cedar Elm	2
Cottonwood	1
Live Oak	6
Pecan	11
Persimmon	
Walnut	2
Water Oak	2
Red Oak	2
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	1
Chickasaw Plum	
Wax Myrtle	

PLOT 3

TREES

Bald Cypress	6
Bur Oak	2
Cedar Elm	1
Cottonwood	
Live Oak	5
Pecan	3
Persimmon	2
Walnut	
Water Oak	16
Red Oak	1
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 4

TREES

Bald Cypress	4
Bur Oak	5
Cedar Elm	1
Cottonwood	
Live Oak	4
Pecan	1
Persimmon	5
Walnut	
Water Oak	9
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	1.5
Chickasaw Plum	1.5
Wax Myrtle	1.5

NUMBER/ACRE	AVERAGE NUMBER/ACRE	
	ALL PLOTS	Trees
		335.4
	Shrubs	4.4

Total 29

Total 39

Total 35

Total 32

PLOT 600

TREES

Bald Cypress	1
Bur Oak	
Cedar Elm	
Cottonwood	1
Live Oak	
Pecan	
Persimmon	3
Walnut	1
Water Oak	2
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 601

TREES

Bald Cypress	
Bur Oak	1
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	1
Persimmon	10
Walnut	1
Water Oak	6
Red Oak	1
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 602

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	4
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 603

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	2
Cottonwood	1
Live Oak	
Pecan	
Persimmon	
Walnut	1
Water Oak	4
Red Oak	1
Overcup Oak	2
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

Total 8

Total 20

Total 10

Total 11

PLOT 604

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	2
Cottonwood	1
Live Oak	
Pecan	4
Persimmon	1
Walnut	2
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	1
Wax Myrtle	

PLOT 605

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	4
Cottonwood	
Live Oak	2
Pecan	
Persimmon	8
Walnut	3
Water Oak	3
Red Oak	
Overcup Oak	2
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 606

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	4
Cottonwood	1
Live Oak	1
Pecan	
Persimmon	1
Walnut	
Water Oak	1
Red Oak	
Overcup Oak	
Willow Oak	
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	

PLOT 607

TREES

Bald Cypress	
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	2
Red Oak	1
Overcup Oak	2
Willow Oak	2
Sweetgum	
Chinquapin	
SHRUBS	
Coral Berry	
Chickasaw Plum	
Wax Myrtle	1

Total 11

Total 22

Total 8

Total 9

POND RE-2

PLOT 609

TREES	
Bald Cypress	
Bur Oak	
Cedar Elm	
Cottonwood	1
Live Oak	3
Pecan	1
Persimmon	4
Walnut	
Water Oak	1
Red Oak	1
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	1
Mulberry	
Ash	
Sycamore	
Black Willow	4
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	

Total 16

PLOT 2

TREES	
Bald Cypress	
Bur Oak	1
Cedar Elm	
Cottonwood	1
Live Oak	
Pecan	3
Persimmon	
Walnut	
Water Oak	1
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	1
Mulberry	
Ash	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	1
Chickasaw Plum	

Total 8

PLOT 610

TREES	
Bald Cypress	
Bur Oak	
Cedar Elm	
Cottonwood	1
Live Oak	2
Pecan	
Persimmon	
Walnut	
Water Oak	1
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	1
Mulberry	
Ash	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	1
Chickasaw Plum	

Total 17

PLOT 611

TREES	
Bald Cypress	0
Bur Oak	1
Cedar Elm	0.0
Cottonwood	13.1
Live Oak	1
Pecan	17.4
Persimmon	3
Walnut	1
Water Oak	4
Red Oak	1
Overcup Oak	1
Willow Oak	0.0
Loblolly Pine	1
Hickory	8.7
Mulberry	4.4
Ash	4.4
Sycamore	7
Black Willow	17.4
SHRUBS	
Wax Myrtle	0.0
Buttonbush	19
Deciduous Holly	4.4
Chickasaw Plum	0.0

Total 39

ALL PLOTS	NUMBER/ ACRE		AVERAGE NUMBER/ACRE
	Trees	Shrubs	
	230.9	117.6	

UPPER E-AREA END LAKE DRAINAGE

PLOT 1213

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	3
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	2
Willow Oak	1
Loblolly Pine	
Hickory	
Mulberry	
Ash	
Sycamore	
Black Willow	1
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	

Total 8

PLOT 1214

TREES	
Bald Cypress	
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	5
Red Oak	
Overcup Oak	1
Willow Oak	1
Loblolly Pine	
Hickory	
Mulberry	
Ash	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	

Total 7

PLOT 1233

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	5
Pecan	
Persimmon	
Walnut	1
Water Oak	7
Red Oak	2
Overcup Oak	2
Willow Oak	2
Loblolly Pine	
Hickory	
Mulberry	
Ash	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	1
Buttonbush	
Deciduous Holly	
Chickasaw Plum	

Total 21

PLOT 1252

TREES	
Bald Cypress	26.1
Bur Oak	0.0
Cedar Elm	8
Cottonwood	0.0
Live Oak	7
Pecan	4.4
Persimmon	0.0
Walnut	2.2
Water Oak	41.4
Red Oak	1
Overcup Oak	26.1
Willow Oak	10.9
Loblolly Pine	0.0
Hickory	0.0
Mulberry	0.0
Ash	0.0
Sycamore	0.0
Black Willow	8.7
SHRUBS	0.0
Wax Myrtle	2.2
Buttonbush	0.0
Deciduous Holly	0.0
Chickasaw Plum	43.6

Total 16

PLOT 1306

TREES	
Bald Cypress	7
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	6
Pecan	
Persimmon	

PLOT 1322

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	14
Pecan	2
Persimmon	

PLOT 1356

TREES	
Bald Cypress	2
Bur Oak	
Cedar Elm	2
Cottonwood	
Live Oak	5
Pecan	
Persimmon	

PLOT 1402

TREES	
Bald Cypress	
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	8
Pecan	
Persimmon	

Walnut		Walnut		Walnut		Walnut	
Water Oak	5	Water Oak	2	Water Oak		Water Oak	
Red Oak	3	Red Oak		Red Oak		Red Oak	
Overcup Oak	2	Overcup Oak	2	Overcup Oak	2	Overcup Oak	1
Willow Oak		Willow Oak	1	Willow Oak		Willow Oak	
Loblolly Pine		Loblolly Pine		Loblolly Pine		Loblolly Pine	
Hickory		Hickory		Hickory		Hickory	
Mulberry		Mulberry		Mulberry		Mulberry	
Ash		Ash		Ash		Ash	
Sycamore		Sycamore		Sycamore		Sycamore	
Black Willow		Black Willow		Black Willow		Black Willow	3
SHRUBS		SHRUBS		SHRUBS		SHRUBS	
Wax Myrtle		Wax Myrtle		Wax Myrtle		Wax Myrtle	
Buttonbush		Buttonbush		Buttonbush		Buttonbush	
Deciduous Holly		Deciduous Holly		Deciduous Holly		Deciduous Holly	
Chickasaw Plum	20	Chickasaw Plum		Chickasaw Plum		Chickasaw Plum	
Total	44	Total	22	Total	11	Total	13

COTTONWOOD/WALLEYE DRAINAGE

PLOT 1456

TREES	
Bald Cypress	4
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	
Total	5

PLOT 1507

TREES	
Bald Cypress	2
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	
Total	2

PLOT 1512

TREES	
Bald Cypress	2
Bur Oak	
Cedar Elm	1
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	
Total	2

PLOT 1516

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	2
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Deciduous Holly	
Chickasaw Plum	
Total	6

ALL PLOTS	NUMBER/ACRE	
	Trees	Average Number/Acre
	78.4	
	47.0	

PLOT 1534

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	3
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	2
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Total	3

PLOT 1541

TREES	
Bald Cypress	
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	
Sycamore	
Black Willow	
SHRUBS	
Wax Myrtle	
Buttonbush	
Total	3

PLOT 1544

TREES	
Bald Cypress	1
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	
Sweetgum	1
Sycamore	
Black Willow	5
SHRUBS	
Wax Myrtle	6
Buttonbush	

PLOT 1553

TREES	
Bald Cypress	4
Bur Oak	
Cedar Elm	
Cottonwood	
Live Oak	
Pecan	
Persimmon	
Walnut	
Water Oak	
Red Oak	
Overcup Oak	
Willow Oak	
Loblolly Pine	
Hickory	
River Birch	2
Sweetgum	2
Sycamore	
Black Willow	4
SHRUBS	
Wax Myrtle	4
Buttonbush	

Deciduous Holly
Chickasaw Plum

Total 4

Deciduous Holly
Chickasaw Plum

Total 7

Deciduous Holly
Chickasaw Plum

Total 13

Deciduous Holly
Chickasaw Plum

Total 17

PLOT 1604

TREES

Bald Cypress
Bur Oak
Cedar Elm
Cottonwood
Live Oak
Pecan
Persimmon
Walnut
Water Oak
Red Oak
Overcup Oak
Willow Oak
Loblolly Pine
Hickory
Mulberry
Ash
Sycamore
Black Willow 2

SHRUBS
Wax Myrtle
Buttonbush
Deciduous Holly
Chickasaw Plum

Total 5 Total 11

PLOT 1609

TREES

Bald Cypress 2
Bur Oak
Cedar Elm
Cottonwood
Live Oak
Pecan
Persimmon
Walnut
Water Oak
Red Oak
Overcup Oak
Willow Oak
Loblolly Pine
Hickory
Mulberry
Ash
Sycamore
Black Willow 3

SHRUBS
Wax Myrtle 6
Buttonbush
Deciduous Holly
Chickasaw Plum



ATTACHMENT B

PHOTOS



PHOTO 1
Upper E-Area End Lake Drainage 2016



PHOTO 2
Upper E-Area End Lake Drainage 2016



PHOTO 3
Upper E-Area End Lake Drainage 2016



PHOTO 4
Upper E-Area End Lake Drainage 2016



PHOTO 5
Lower E-Area End Lake Drainage 2016



PHOTO 6
Lower E-Area End Lake Drainage 2016



PHOTO 7
Lower E-Area End Lake Drainage 2016



PHOTO 8
Lower E-Area End Lake Drainage 2016



PHOTO 9
Pond RE-2 Border 2016



PHOTO 10
Pond RE-2 Border 2016



PHOTO 11
Walleye/Cottonwood Drainage 2016



PHOTO 12
Walleye/Cottonwood Drainage 2016



PHOTO 13
Walleye/Cottonwood Drainage 2016



PHOTO 14
Walleye/Cottonwood Drainage 2016



Alcoa Primary Metals
Energy Division-Sandow Mine
3990 John D. Harper Road
PO Box 1491
Rockdale, TX 76567-1491 USA

July 12, 2017

#3140230
per

Mr. J. Denny Kingsley, P.E., Director
Surface Mining and Reclamation Division
Railroad Commission of Texas
P.O. Box 12967
Austin, Texas 78701-2967

Railroad Commission
of Texas
RECEIVED

JUL 17 2017

Surface Mining Division

Subject: Alcoa USA Corp.
Sandow Mine, Permit No. 1F
Revision No. 68, Proposed Postmine Landuse Revision
Alcoa Submittal 2017-33

Dear Mr. Kingsley:

Enclosed are three copies of our request to modify the approved postmine landuse plan for Sandow Mine. The request is to convert approximately 561 acres from the approved postmine landuse to industrial / commercial landuse in support of Alcoa's industrial activities at the Rockdale facilities. Alcoa considers this a revision to the approved permit and provides a voucher in the amount of \$500 for this revision as required by the Regulations.

Please do not hesitate to call me if you have questions concerning this submittal.

Respectfully,

A handwritten signature in blue ink that reads "Tommy E. Hodges".

Tommy E. Hodges, P.E.
Alcoa Inc.
Rockdale Operations
Energy Manager
Attachments

REC'D
07/17/2017

File Ref. No. _____
Fee _____
(for official use only)

Railroad Commission
of Texas
RECEIVED
SMRD-2C
03/03/03

**RAILROAD COMMISSION OF TEXAS
SURFACE MINING AND RECLAMATION DIVISION**

JUL 17 2017

Surface Mining Division

Application for Nonsignificant Revision to Coal Mining Operations Permit

Complete all applicable portions. Please submit three (3) copies of your application on standard size paper (8 1/2" x 11", except for maps) to the Director of the Surface Mining and Reclamation Division. See *Texas Coal Mining Regulations* and the *Texas Surface Coal Mining and Reclamation Act* for information.

Name of Applicant:	Alcoa USA Corp.		
Name of Mining Operation:	Sandow Mine	Permit No. 1F	
Permanent Mailing Address:	P.O. Box 1491		
	Rockdale	Street or P O Box	TX 76567
Contact Person	Tommy Hodges	City	State Zip Code
Revision Description	Proposed Postmine Landuse Revision		

Type of Revision [check appropriate box(s)]

Administrative Operation Plan Reclamation Plan Incidental Boundary Revision

Section of Permit to be Revised [check appropriate box(s)]

Legal, Financial and Compliance-Related Info (Administrative Information):

Right of Entry/Property	§§12.116, 12.117	<input type="checkbox"/>	Other Permits	§12.121	<input type="checkbox"/>
Ownership and Control	§12.116	<input type="checkbox"/>	Cultural Resources	§§12.125(2), 12.151	<input type="checkbox"/>
Insurance	§12.120	<input type="checkbox"/>			

Environmental Resources:

Geology/Overburden Data	§12.127	<input type="checkbox"/>	Soils	§12.134	<input type="checkbox"/>
Ground Water	§§12.128, 12.130	<input type="checkbox"/>	Land Use	§12.135	<input type="checkbox"/>
Surface Water	§§12.129, 12.130	<input type="checkbox"/>	Map/Sections/Plans	§§12.136, 12.137	<input type="checkbox"/>
Vegetation	§12.132	<input type="checkbox"/>	Prime Farmland	§12.138	<input type="checkbox"/>
Fish and Wildlife Resources	§12.133	<input type="checkbox"/>			

Operation Plan:

Mine Plan	§12.139	<input type="checkbox"/>	Maps and Plans	§12.142	<input type="checkbox"/>
Blasting	§12.141	<input type="checkbox"/>	Air Pollution Control Plan	§12.143	<input type="checkbox"/>

Reclamation Plan:

Fish & Wildlife Plan	§12.144	<input type="checkbox"/>	Ponds	§12.148	
Reclamation Timetable	§12.145(b)(1)	<input type="checkbox"/>	Temporary Impoundment		<input type="checkbox"/>
Reclamation Cost Estimate	§12.145(b)(2)	<input type="checkbox"/>	Temporary Sediment Pond		<input type="checkbox"/>
Backfilling and Grading	§12.145(b)(3)	<input type="checkbox"/>	Permanent Sediment Pond		<input type="checkbox"/>
Topsoil Handling	§12.145(b)(4)	<input type="checkbox"/>	Permanent Impoundment		<input type="checkbox"/>
Revegetation Plan	§12.145(b)(5)(A-F)	<input type="checkbox"/>	Fresh Water Diversion		<input type="checkbox"/>
Soil Monitoring Plan	§12.145(b)(5)(G)	<input type="checkbox"/>	Disturbed Water Diversion		<input type="checkbox"/>
Conservation of Coal	§12.145(b)(6)	<input type="checkbox"/>	Mining Near Underground Mining	§12.149	<input type="checkbox"/>
AFM/TFM Handling Plan	§12.145(b)(7)	<input type="checkbox"/>	Stream Diversions	§12.150	<input type="checkbox"/>
Well/Hole Plugging	§12.145(b)(8)	<input type="checkbox"/>	Relocation/Closure of Public Roads	§12.152	<input type="checkbox"/>
Hydrologic Reclamation Plan	§12.146(a)	<input type="checkbox"/>	Road Systems	§12.154	
Long-Term Ground-Water Monitoring	§12.146(b)	<input type="checkbox"/>	Temporary Ancillary Road		<input type="checkbox"/>
Long-Term Surface-Water Monitoring	§12.146(c)	<input type="checkbox"/>	Temporary Primary Road		<input type="checkbox"/>
Probable Hydrologic Consequences	§12.146(d)	<input type="checkbox"/>	Permanent Primary Road		<input type="checkbox"/>
Postmine Land Use	§12.147	<input checked="" type="checkbox"/>			

§12.147 RECLAMATION PLAN: POSTMINING LAND USES.

(a) *Each plan shall contain a detailed description of the proposed use, following reclamation, of the land within the proposed permit area, including a discussion of the utility and capacity of the reclaimed land to support a variety of alternative uses, and the relationship of the proposed use to existing land-use policies and plans. This description shall explain:*

(I) *how the proposed postmining land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use*

The Alcoa Inc. reclamation plan provides a post-mining land use consistent with all applicable State and local land use plans and programs, and is also consistent with the surface owner plans. The pre-mine land uses of all the proposed acres in the permit area were classified, and this data is presented in Section 12.135 (Land-Use Information).

The postmine land use in the proposed Sandow Mine has been selected for pastureland, fish and wildlife habitat, industrial/commercial, and developed water resources. Proposed mining activity will result in **9,939** acres being disturbed, and Alcoa Inc. proposes to reclaim **6,050** of these acres to pastureland, **383** acres to fish and wildlife habitat, **2,948** acres to industrial commercial, and **558** acres to developed water resources. The proposed reclamation plan will allow the land to be restored to a post mining land use state that is capable of supporting the same or better uses than the pre mining land use state.

The reclaimed land that is proposed to be used as pastureland is shown conceptually on Plate .147-1 and Plate .147-2. This will be achieved by planting reclaimed land with introduced forage grass species, primarily hybrid bermudagrass and other compatible species, and/or native grasses species. This diversity will enable established vegetation communities to withstand disease or pests specific to one species and will ensure the continuation of stands during adverse environmental conditions. In keeping with established land management practices in the area, landowners will utilize reclaimed pastureland for livestock grazing and hay production.

As discussed in Sections 12.144 (Fish and Wildlife Plan) and 12.145 (Reclamation Plan), grass, trees, vines, and shrubs will be planted to establish fish and wildlife habitat features to enhance wildlife use. The reclaimed land that is proposed to be used as fish and wildlife land use is shown conceptually on Plate .147-1 and Plate .147-2. Reclaimed wetland features will be located in such a manner to enhance habitat quality, especially for waterfowl and aquatic life. The locations of these features are subject to change. These features will be located during the reclamation process in such a manner as to mitigate wetland areas, provide appropriate wildlife corridors, and enhance the post-mining pastureland to a higher and more productive use than existed prior to mining. Details about these areas may be found in Sections 12.144 (Fish and Wildlife Plan) and 12.145 (Reclamation Plan: General Requirements) of this permit application.

Industrial/commercial includes rerouted FM Road 112 and County Road 314, municipal water wells, and Class II/Class III land fill. This facility will be operated under TCEQ guidelines and permit requirements.

Developed water resources displayed on Plate .147-1 and Plate .147-2 include the reclamation ponds and selected sedimentation ponds left as a permanent impoundment.

Table .147-1 reflects the pre- and postmining acreage proposed to be disturbed by mining activities through the end of the permit term. Table .147-1 also shows the pre- and postmining percentages of each of the land uses prior to and after reclamation.

**TABLE .147-1
PREMINE – POSTMINE COMPARISON**

<u>Land Use Category</u>	<u>Acres</u>	<u>Areal %</u>	<u>Acres</u>	<u>Areal %</u>
Pastureland	3,314	33.4%	6,050	66.3%
Fish and Wildlife Habitat	0	0%	383	3.9%
Industrial/Commercial	1,142	11.5%	2,948	24.2%
Developed Water Resources	92	0.9%	558	5.6%
Cropland	12	0.1%	0	0%
Grazingland	4,529	45.5%	0	0%
Undeveloped Land	850	8.6%	0	0%
Total	9,939	100%	9,939	100%

Support activities to achieve the proposed postmine land uses include vegetation establishment and management practices and wildlife management and protection measures, particularly in the early post-reclamation years when the ecology is fragile. Pasturelands will be fertilized according to soil analyses and production goals. If grazing is used as a management tool, stocking rates will be based on vegetative production goals determined by growing season rainfall, fertility requirements, rotational grazing schedules, etc. in order to maintain a healthy and viable vegetative stand. To ensure over-grazing does not occur, livestock herd sizes will be maintained at or below carrying capacity. To ensure over-browsing does not occur, White-tailed deer herds will be maintained at or below carrying capacity through hunting. Wildlife habitat will be managed such that natural succession will occur. Industrial/commercial land will have sufficient ground cover to control erosion.

Water resources will be developed for livestock and wildlife usage. Ponds will be utilized as an integral part of each grazing system. Aquatic vegetation will be planted or allowed to volunteer in ponds to improve waterfowl habitat.

Postmining land uses were considered when developing the plan for regrading disturbed areas. Reclamation activities are designed to establish an effective permanent vegetative cover that, at the minimum, equals the vegetation cover and productivity present prior to mining. Current operating experience has shown that agricultural equipment for such practices as fertilizing, mowing, haying and other agricultural practices will easily traverse the reclaimed area. Livestock grazing will not be limited by postmining topography.

Pastureland will be reclaimed in a manner consistent with an overall management system. Tracts will be reclaimed to follow a management system compatible with landowner's postmine use. Reclaimed pastureland will be managed at levels recommended by United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) and the Texas

Agricultural Extension Service (TAES). Management activities may include soil amendments, mowing, haying, repairing rills and gullies, controlling weeds and insects and grazing activity.

(2) *where range or grazing is the proposed postmining use, the detailed management plans to be implemented*

Rangeland and grazingland postmining land uses are not proposed for this permit.

(3) *where a land use different from the premining land use is proposed, all materials needed for approval of the alternative use under §12.399 of this title (relating to Postmining Land Use)*

Alcoa Inc. proposes to change the land use classification from grazingland in poor condition, industrial/commercial, cropland, residential, and undeveloped land to pastureland, fish and wildlife habitat, industrial/commercial, and developed water resources.

Pastureland will be established by introducing grasses on reclaimed land where pastureland, grazingland, and undeveloped land occupied the premine areas (see Section 12.135). The proposed reclamation plan (described in Section 12.145) is similar to the plan currently in use in the Permit 1E area, which has proven feasible.

Impacts to fish and wildlife and proposed mitigation are discussed in Section 12.144 (Fish and Wildlife Plan). Section 12.144 also addresses the affects on threatened and endangered species within the mining area. Alcoa Inc. proposes measures for wildlife habitat including planting trees, shrubs, forbs and grasses in plots, corridors, hedgerows, and/or mottes. A mosaic of habitats will be interspersed in the reclaimed areas and corridors created to connect these features with undisturbed areas when possible. These features may also serve as loafing areas for livestock. Land management will ensure proper use of the vegetation communities.

Industrial/commercial lands will be stabilized to prevent erosion and be reclaimed to meet the intended use. The Class II/Class III land fill will be operated under a TCEQ permit, presented in Section .121 of this application. All drainage from the proposed landfill area is contained within the I/C areas as depicted on the maps.

Plans for postmining land uses have been prepared under the general supervision of a registered professional engineer to ensure that the plans conform to applicable acceptable standards for adequate land stability, drainages, vegetative cover and esthetics design appropriate for pastureland. Alcoa Inc. has the financial resources to implement the proposed plan.

Livestock production is the principal economic return from surrounding properties in the region. The proposed land use change will have a positive impact by increasing the amount of forage available for livestock production in pastureland and increased diversity in fish and wildlife habitat.

Postmining land uses were developed to enhance the future land use while maintaining land stability, vegetative cover, drainage and water quality and quantity. The proposed land use change is not expected to pose any threat to public health or contribute to air and water pollution. Reclamation activities

will be initiated as described in Table 145-1 of the reclamation plan, with no delays occurring due to the proposed land use changes.

The proposed land use changes are compatible with adjacent land uses and will not violate any existing local, state or federal land use policies. In addition, no public facilities will be required to support the land use changes.

(4) *the consideration which has been given to making all of the proposed surface mining activities consistent with surface-owner plans and applicable State and local land-use plans and programs*

Full consideration has been given to surface owner plans in the preparation of the postmining land use plan and in the mining activities in general. In particular, the plan was guided by landowners' comments included in Appendix 147-A in this Section. Reclamation plans were developed to incorporate requests made by all landowners affected by this permitting action.

State and local agencies were contacted and available plans reviewed. In general, state and local plans for the area emphasize agricultural land use in the area. Alcoa Inc. works closely with the local County Soil & Water Conservation District, Natural Resource Conservation Service (NRCS), Texas Agriculture Extension Service (TAES), and Texas Parks and Wildlife Department (TWPD) in determining and establishing successful reclamation procedures.

(b) *The description shall be accompanied by a copy of the comments concerning the proposed use by the legal or equitable owner of record of the surface of the proposed permit area and the State and local government agencies which would have to initiate, implement, approve, or authorize the proposed use of the land following reclamation.*

As legal owner of the majority of the tracts within the permitted area, Alcoa Inc. is aware of and authorizes all alternative post mine land uses from premine land uses described in Section 12.135 (Land Use Information). Alcoa Inc. has provided comments authorizing the alternative land use to Industrial/Commercial, and are presented in Appendix B. Alcoa Inc. has received comments concerning the alternative postmine land uses for lease tracts, specifically Lease #6 owned by A.H. Sorenson, Lease#16 owned by Jo Ann D. Hall, Lease #24 owned by George T. Shannon. Copies of the acknowledgment letters from these landowners are contained in Appendix .147-B of State Mining Permit No. 1E.

TCEQ has approved and authorized the Class II/Class III Land Fill. The facility will operate under TCEQ regulations.

ENGINEERING CERTIFICATION

I, Dennis Wade Hill, a licensed professional engineer in the State of Texas, do hereby certify that the Postmine Landuse table, maps and text provided in Revision 68 of the Sandow Mine, Permit 1F Postmine Landuse Revision were prepared under my direct supervision, and to the best of my knowledge and belief are true and correct and comply with the requirements of §12.147 of the Coal Mining Regulations of the Railroad Commission of Texas.



Dennis Wade Hill

Date 6/1/17

Dennis Wade Hill
P.E. No. 84679
Hill Engineering P.L.L.C.
TBPE Registration No. 3532